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BIOMASS IN SOUTHEASTERN FORESTS

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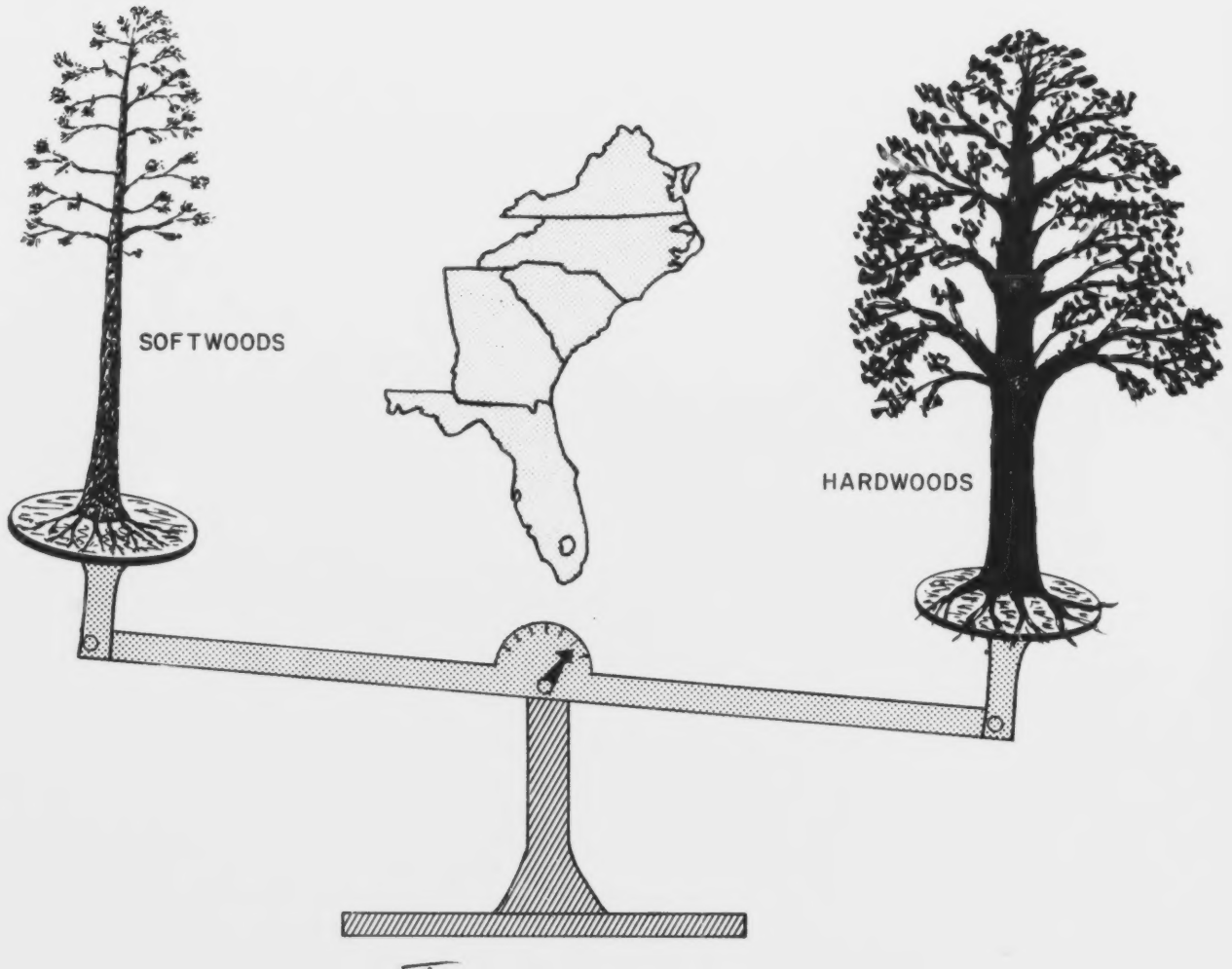

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Biomass in Southeastern Forests

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ABSTRACT.—The 88.5 million acres of commercial forest land in the Southeast contain some 6.2 billion green tons of woody biomass. Distribution of this material is reported by State, tree size, and tree species. Relative amounts in various portions of typical trees are also reported for major species groups.

Keywords: Florida, Georgia, North Carolina, South Carolina, Virginia, forest inventory, fuelwood.

BIOMASS IN SOUTHEASTERN FORESTS

The purpose of any timber inventory is to describe the trees in a forest in terms that are meaningful to potential users. For the first 40 years after statewide Forest Surveys were started in the Southeast in 1933, primary interest was in sawtimber and cordwood volumes in the main stems of trees. These volumes to the prevailing merchantable top diameters were expressed in cubic feet, board feet, and cords—meaningful units to the people who were using the wood. Two developments in recent years have created a need to express wood inventories in a new way: mobile tree chippers that can harvest the entire aboveground portions of trees and an energy shortage that makes all woody material valuable. Wood chips are traded by weight rather than volume, the fuel value of wood is more closely related to its weight than its volume, and other timber products are increasingly traded by weight. Thus, it is important that inventory results be expressed in terms of weight—biomass.

This report represents the first effort to express the timber inventory of the Southeastern United States in terms of biomass. Numbers of trees, volumes, and weights are presented by State for the major timber species and species groups in the region. States included are Virginia, North and South Carolina, Georgia, and Florida. Regional tables show the proportions of cubic volume in various tree components.

The values reported are the best estimates that can be made at this time, but the techniques for estimating biomass can be greatly improved. In the first section of this report we describe the estimation techniques that were used. In the final section we describe practical changes that would improve the reliability and completeness of biomass data.

PROCEDURES

Much of the information in this report on numbers of trees of various sizes and on timber volumes is from the statewide forest inventories completed by the Renewable Resources Evaluation Unit of the Southeastern Forest Experiment Station. Inventory procedures are outlined in the Resource Bulletins that report the results of the most recent inventory in each State—1972 for Georgia (Knight and McClure 1974), 1974 for North Carolina (Knight and McClure 1975), 1977 for Virginia (Knight and McClure 1978), 1978 for South Carolina (Knight and McClure 1979), and 1980 for Florida (report being prepared).

In the standard inventory the first step is to determine the acreage of forest land by classifying land use at thousands of photo points systemati-

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cally spaced over each county. There are over 8 million such photo points in the Southeast. A subsample of these points is then examined on the ground to provide adjustments for changes since photos were taken and errors in photo interpretation. From the total acreage of forest land, areas that are withdrawn from timber utilization and areas incapable of producing crops of industrial wood are subtracted. What remains is termed "commercial forest land." The volumes and weights reported here apply solely to this commercial forest land.

Numbers and sizes of trees are tallied at 23,777 ground sample locations systematically distributed on commercial forest land. At each sample location, trees 5 inches d.b.h. and larger are measured at 3 to 10 points where variable-radius plots are defined by a prism with a basal-area factor of 37.5. Smaller treees are tallied on fixed-radius plots around the point centers.

Plot tallies and area figures permit estimation of the number of trees for each species and size class in the State. These numbers are converted to volumes through a series of equations based on detailed measurements of more than 35,000 trees from throughout the Southeast. Cost (1978) described the measurement of sample trees, as well as the system for developing the equations.

Biomass is defined here as the aboveground green weight of wood and bark in all live trees 1.0 inch d.b.h. and larger. In this paper, biomass estimates were made by using prediction equations developed by the Utilization of Southern Timber Research Unit of the Southeastern Forest Experiment Station in Athens, Georgia. For several years this unit has been developing equations for estimating total tree and tree component weights and volumes of the major southern tree species.

The procedures used for collecting and reporting detailed biomass data were outlined by Clark (1979) and Saucier (1979). Published reports from which appropriate equations were taken are by Clark and others (1980a, 1980b, 1980c); Clark and Schroeder (1977); McNab (In press); Phillips (1981); Saucier and Boyd (In press); and Taras (1980). Many other equations were from reports that are still being prepared for publication. These equations are the best available for estimating tree weight from d.b.h. and total height measurements. The database was compiled by felling, measuring, and weighing of total trees and tree components, and determining wood and bark proportions of more than 4,000 trees from 62 locations in the Southeast.

MAJOR FINDINGS

The 88.5 million acres of commercial forest land in the Southeast contain some 6.2 billion green tons of woody biomass. Among the five States, Georgia leads with 1.6 billion tons, and North Carolina is a close second with 1.5 billion tons. Florida ranks last with 0.8 billion tons. Table 1 shows biomass by State, species group, type of tree, and portion of tree.

State totals, of course, are dependent upon the acreage of commercial forest within the State as well as the concentration of material on these acres. In interpreting the totals, therefore, it is helpful to know how much commercial forest each State contains. These totals are:

State	Commercial forest
	Thousand acres
Georgia	24,839.0
North Carolina	19,544.8
Virginia	15,972.8
Florida	15,664.2
South Carolina	12,502.9
Total	88,523.7

Note that land withdrawn from timber production and land incapable of producing at least 20 cubic feet of wood per acre per year is excluded from these totals.

Average amounts of biomass per acre vary considerably by State. The Southeastern average of 70.7 green tons per acre represents a very wide range. The average for Florida is 55.2 tons and that for Virginia is 81.8 tons (table 2). Three factors obviously influence the biomass on a forest acre—age, stocking, and productivity of the site. A newly established stand may contain no woody material in stems over 1 inch in diameter at breast height, while a mature hardwood sawtimber stand on a good site may contain over 250 green tons of biomass per acre.

In Florida, where average biomass per acre is relatively low, more than half of the material is softwood. A large proportion of this softwood biomass is in pine plantations that are managed on short rotations. At the end of each rotation, biomass returns to near zero. In Virginia, on the other hand, more than three-fourths of the biomass is hardwood, and many of the hardwood stands are not managed for high timber production. Biomass has been allowed to accumulate in these stands for long periods, and it will continue to do so as long as hardwoods are underutilized.

MAJOR SPECIES

Loblolly pine is the most economically important timber species in the Southeastern United States. In Georgia, the Carolinas, and Virginia it is the most frequently planted species because of its rapid growth and suitability for construction lumber and paper pulp. The species' importance is reflected in its biomass of 0.9 billion tons (table 3). This is about twice the biomass of the second most important species—slash pine. In Florida, slash pine is easily the

Table 1.–Total green weight of aboveground tree biomass (excluding foliage) on commercial forest land in the Southeast, by State and species group[1]

Southeast region, by State and species group	Biomass			Growing stock			Rough and rotten			Saplings
	Total	Bole	Top[2]	Total	Bole	Top	Total	Bole	Top	Total
	Million tons									
Florida:										
Softwoods	461.4	325.5	135.9	394.8	320.5	74.3	7.1	5.0	2.1	59.5
Hardwoods	402.4	267.6	134.8	225.0	179.8	45.2	110.6	87.8	22.7	66.7
Total	863.9	593.1	270.7	619.8	500.3	119.5	117.7	92.8	24.8	126.2
Georgia:										
Softwoods	762.7	554.3	208.4	656.0	546.2	109.8	10.7	8.1	2.5	96.0
Hardwoods	791.8	491.8	299.9	499.1	398.9	100.1	125.1	92.9	32.1	167.5
Total	1,554.6	1,046.2	508.3	1,155.1	945.1	209.9	135.8	101.0	34.7	263.6
North Carolina:										
Softwoods	510.2	384.4	125.8	450.3	379.2	71.0	10.1	5.1	5.0	49.7
Hardwoods	1,008.4	657.2	351.1	687.8	556.1	131.6	136.9	101.0	35.8	183.7
Total	1,518.6	1,041.7	476.9	1,138.1	935.4	202.6	147.1	106.2	40.8	233.4
South Carolina:										
Softwoods	433.1	337.9	95.2	389.9	328.8	61.0	11.4	9.1	2.3	31.8
Hardwoods	580.8	387.0	193.8	390.8	314.4	76.3	96.0	72.5	23.5	93.9
Total	1,014.0	724.9	289.0	780.8	643.3	137.4	107.5	81.6	25.8	125.6
Virginia:										
Softwoods	287.7	209.0	78.6	241.6	202.0	39.5	9.1	7.0	2.1	37.0
Hardwoods	1,019.2	691.0	328.2	695.8	561.4	134.4	173.4	130.0	43.8	150.0
Total	1,306.9	900.0	406.8	937.4	763.5	173.9	182.5	136.5	45.9	186.9
Total Southeast	6,258.1	4,306.1	1,951.9	4,631.3	3,787.7	843.6	690.7	518.4	172.3	936.0
Total Softwoods	2,455.1	1,811.1	643.9	2,132.6	1,776.7	355.6	48.4	34.3	14.0	274.0
Total Hardwoods	3,802.6	2,494.6	1,307.8	2,498.5	2,010.6	487.6	642.0	484.2	157.9	661.8

[1] Columns do not add because of rounding.
[2] Includes total sapling weight.

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Table 2.–Per acre green weight of aboveground tree biomass (excluding foliage) on commercial forest land in the Southeast, by State and species group[1]

Southeast region, by State and species group	Biomass			Growing stock			Rough and rotten			Saplings
	Total	Bole	Top[2]	Total	Bole	Top	Total	Bole	Top	Total
	Tons									
Florida:										
Softwoods	29.5	20.8	8.7	25.2	20.5	4.7	0.4	0.3	0.1	3.8
Hardwoods	25.7	17.1	8.6	14.4	11.5	2.9	7.1	5.6	1.4	4.3
Total	55.2	37.9	17.3	39.6	32.0	7.6	7.5	5.9	1.5	8.1
Georgia:										
Softwoods	30.7	22.3	8.4	26.4	22.0	4.4	.4	.3	.1	3.9
Hardwoods	31.9	19.8	12.1	20.1	16.1	4.0	5.0	3.7	1.3	6.7
Total	62.6	42.1	20.5	46.5	38.1	8.4	5.4	4.0	1.4	10.6
North Carolina:										
Softwoods	26.1	19.7	6.4	23.0	19.4	3.6	.5	.3	.2	2.5
Hardwoods	51.6	33.6	18.0	35.2	28.4	6.7	7.0	5.2	1.8	9.4
Total	77.7	53.3	24.4	58.2	47.8	10.3	7.5	5.5	2.1	11.9
South Carolina:										
Softwoods	34.6	27.0	7.6	31.2	26.3	4.9	.9	.7	.2	2.5
Hardwoods	46.4	31.0	15.5	31.3	25.2	6.1	7.7	5.8	1.9	7.5
Total	81.1	58.0	23.1	62.5	51.5	11.0	8.6	6.5	2.1	10.0
Virginia:										
Softwoods	18.0	13.1	4.9	15.1	12.6	2.5	.6	.4	.1	2.3
Hardwoods	63.8	43.3	20.5	43.6	35.1	8.4	10.8	8.1	2.7	9.4
Total	81.8	56.4	25.5	58.7	47.7	10.9	11.4	8.5	2.8	11.7
Average/acre:										
Softwoods	27.7	20.4	7.3	24.1	20.1	4.0	.5	.4	.2	3.1
Hardwoods	43.0	28.2	14.8	28.2	22.7	5.5	7.3	5.4	1.7	7.5
Total Southeast	70.7	48.6	22.1	52.3	42.8	9.5	7.8	5.8	1.9	10.6

[1] Columns do not add because of rounding.
[2] Includes total sapling weight.

Table 3.–Total green weight of aboveground softwood tree biomass (excluding foliage) on commercial forest land in the Southeast, by species and diameter class[1]

Species	All diameter classes	2	4	6	8	10	12	14	16	18	20	22–28	30+
	Million tons												
Southern pines:													
Loblolly	922.6	17.4	54.6	113.8	132.6	138.2	140.2	120.8	88.0	55.5	29.6	30.1	1.8
Longleaf	180.4	1.8	7.6	13.9	24.7	38.4	43.3	29.2	13.3	5.0	1.6	1.3	0
Pond	92.5	1.4	5.2	13.0	15.8	17.8	14.8	10.6	6.8	3.5	2.0	1.2	0
Shortleaf	255.0	6.8	20.2	38.4	55.2	55.6	40.6	22.0	9.4	4.2	1.5	1.0	0
Slash	460.8	15.4	64.2	95.8	93.8	68.2	52.8	33.6	19.8	9.0	4.4	3.4	.2
Virginia	211.0	10.7	32.4	45.4	48.8	39.0	21.0	9.0	2.9	1.0	.2	.1	0
Other	52.1	1.4	5.0	7.3	8.6	9.3	7.8	5.2	3.5	2.0	.8	.8	1
Total	2,174.6	55.1	189.4	327.7	379.8	366.7	320.7	230.4	144.0	80.3	40.3	38.0	2.1
Other softwoods:													
Eastern white pine	40.2	.8	1.4	2.8	4.5	4.8	4.9	5.0	4.7	3.4	2.3	4.5	.8
Cypress	195.2	4.9	11.8	18.8	25.2	28.6	27.6	23.6	16.8	11.0	8.2	13.0	5.3
Other	45.3	4.1	6.4	7.9	5.6	5.2	3.4	3.4	2.2	1.6	1.6	2.4	1.4
Total	280.7	9.8	19.6	29.6	35.3	38.7	35.9	32.2	23.7	16.0	12.1	19.9	7.5
All species	2,455.4	65.0	209.0	357.4	415.1	405.4	356.7	262.6	167.7	96.4	52.5	58.0	9.6

[1] Columns do not add because of rounding.

most important timber species. Biomass of all southern pines in the Southeast is over 2.2 billion tons. Uses of species within this group are almost identical for trees of a given size. In addition to the southern pines, other important southeastern softwoods are eastern white pine in the Southern Appalachians, and cypress in the swamps. Cypress biomass in the region totals 195 million tons.

Forest survey crews in the Southeast tally information on some 50 different species of hardwoods. In this report, many of these species have been grouped to keep tables down to a manageable size and to reflect our lack of knowledge about relationships between volume and weight for many of the species. Volumes and weights are reported for 21 species and species groups. On the basis of wood texture, species are classed as "soft hardwoods" and "hard hardwoods."

Among soft hardwoods, the tupelos and blackgum together have the greatest biomass–406 million tons. Sweetgum is the single species with greatest biomass–366 million tons. Biomass of the soft maples totals 317 million tons.

Oaks dominate in the hard hardwood group. All oaks together account for 1.5 billion green tons, almost one-quarter of the woody biomass in the Southeast. Eight individual species–black, chestnut, laurel, northern red, scarlet, southern red, water, and white oaks–are of considerable importance.

Hardwood exceeds softwood biomass in every Southeastern State except Florida, and hardwoods account for more than 60 percent of the region's woody biomass. Since southern pines are in greater demand than southern hardwoods, a continuation of current consumption patterns is likely to increase the proportion of hardwood in the Southeast's biomass inventory.

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TYPES OF MATERIAL

People planning to exploit woody biomass as fuel would benefit by concentrating on materials that are currently unused by traditional forest industries. By doing so, competition for the available resource would be minimized, and fuelwood might be relatively cheap.

Major unutilized sources of wood include large quantities of logging residues, trees that do not meet merchantability standards, suppressed saplings in the understories of mature stands, and vast acreages of understocked stands needing regeneration but currently supporting insufficient volumes for profitable commercial logging.

The tables presented in this report show three essentially unutilized sources of wood and bark: tops, rough and rotten trees, and saplings. Tops are defined here as the portions of main stems and forks below 4 inches in diameter plus all limbs over ½ inch in diameter at the base in trees larger than 5 inches d.b.h. Biomass of saplings–trees 1 to 5 inches d.b.h.–is listed separately, but the material in saplings is similar in size to that in tops. Rough and rotten trees are those whose species or form makes them unsuitable for traditional commercial timber products.

In the Southeast, tops of growing-stock trees contain almost 0.8 billion tons of biomass, and rough and rotten trees contain another 0.7 billion tons. Saplings contain 1.0 billion tons (table 1). These three categories account for almost 40 percent of the region's biomass.

Tables 3 and 4 show biomass for the Southeast's major timber species by diameter class. Since species and size are the major determinants of utility, the values shown are rough indicators of the quantity of biomass present and of the surplus material in the inventory.

Table 5 shows how tree biomass is divided among major types of owners. Almost three-fourths of the biomass is controlled by private landowners other than forest industry. Only a little over one-tenth of the Southeast's biomass is on public land.

TREE COMPONENTS

Table 6 shows how biomass is distributed among components of individual trees of various sizes. Separate tables are presented for softwoods, hardwoods, and soft hardwoods.

These tables are presented primarily for those who wish to make their own biomass analyses. If number of trees of various sizes and species in an area can be estimated, these tables permit computation of the weight of wood and bark in saw logs, in stems to a 4-inch top, and in tops and limbs.

The distribution of wood between the saw-log portion and the upper-stem portion of trees is considerably different for hardwoods than for softwoods. In a 12-inch softwood, for example, 76 percent of the aboveground weight is in the saw-log portion and only 14 percent in tops and branches (table 6). In a 12-inch hard hardwood, on the other hand, only 54 percent of the weight is in the saw-log portion and 23 percent is in the upper stem. Part of this difference can be explained by the tendency of hardwoods to have large, spreading crowns and part by the difference in minimum saw-log diameters of softwoods and hardwoods. The minimum saw-log diameter outside bark is 7.0 inches for softwoods and 9.0 inches for hardwoods.

The relatively large amounts of biomass above the saw-log portions of hardwood trees are of considerable importance. In many hardwood logging operations, only saw logs are taken from the site. The remaining portions of the trees are left in the woods as logging residue, but under the proper economic conditions they might well be harvested for fuel. The most economical method is to harvest logging residue along with saw logs and then process it into fuelwood chips at a landing.

There is, however, a justified concern that the removal of all vegetation during harvest could result in excessive nutrient loss, increased erosion, and a general loss of site productivity. Research is needed to provide realistic guidelines for protecting site quality. Furthermore, certain cull trees containing cavities suitable for nesting sites are very valuable to wildlife and should not be arbitrarily destroyed.

Table 4.–Total green weight of aboveground hardwood tree biomass (excluding foliage) on commercial forest land in the Southeast, by species and diameter class[1]

Species	All diameter classes	2	4	6	8	10	12	14	16	18	20	22-28	30+
	Million tons												
Soft hardwoods:													
Sweetgum	366.1	26.8	41.1	44.9	48.0	49.0	46.0	36.7	27.2	17.2	11.2	15.3	2.4
Yellow-poplar	267.5	7.6	13.6	20.6	26.2	34.0	41.4	37.8	29.6	21.1	13.6	18.8	3.0
Tupelo and blackgum	406.3	29.8	36.0	34.0	42.0	48.7	52.3	48.2	36.5	26.2	16.6	28.1	7.8
Bay and magnolia	69.6	8.1	10.5	8.8	8.4	8.5	7.3	6.4	4.0	2.8	2.2	2.2	.6
Soft maples	317.5	37.7	47.8	41.9	39.8	38.8	31.1	25.0	18.6	12.8	8.7	12.9	2.2
Other species	115.4	9.1	12.7	12.2	14.0	13.0	13.2	11.0	9.1	6.2	4.2	8.2	2.4
Total	1,542.0	119.2	161.7	162.4	178.4	192.2	191.4	165.1	125.0	86.4	56.4	85.5	18.4
Oaks:													
Black	107.2	2.8	5.9	10.7	12.2	14.8	14.9	13.4	10.9	7.4	5.4	7.3	1.4
Chestnut	206.0	3.2	11.6	17.4	22.8	27.1	25.2	24.6	21.5	15.5	11.5	20.6	4.9
Laurel	129.1	5.8	8.4	9.4	11.3	13.1	12.3	12.2	10.3	8.9	7.8	21.1	8.4
Northern red	123.4	2.8	4.6	8.4	10.2	13.0	14.1	14.1	12.5	10.8	9.1	17.7	5.9
Scarlet	137.0	3.0	6.6	14.6	19.8	22.5	21.0	18.0	12.6	8.8	4.5	5.0	.4
Southern red	101.9	6.0	10.0	10.4	11.9	12.4	13.6	11.8	8.7	5.6	3.7	5.6	2.0
Water	154.8	13.4	17.2	21.8	19.6	18.0	15.8	12.5	10.0	7.8	5.2	9.8	3.4
White	304.2	8.4	18.0	28.9	33.7	41.8	42.1	38.0	31.0	20.8	14.6	22.4	4.6
Other	213.7	7.7	10.8	16.8	18.9	21.1	22.3	21.0	17.6	14.7	12.7	32.2	17.8
Scrub	65.8	14.3	15.4	14.0	9.7	5.8	3.8	1.5	.6	.4	.5	0	0
Total	1,543.2	67.4	108.7	152.6	170.0	189.8	185.2	167.2	136.0	100.7	74.6	141.7	49.2
Other hardwoods:													
Ash	86.0	7.9	10.0	12.2	11.5	10.8	9.5	8.1	5.8	4.2	2.4	3.0	.5
Hickory	210.2	12.4	17.6	20.5	23.9	27.0	26.5	25.4	18.9	14.7	8.0	12.6	2.5
Other hard hardwoods	273.2	42.1	46.6	25.8	26.8	27.2	26.4	21.4	15.3	13.6	8.7	16.2	3.1
Tropicals and misc.	123.0	28.9	39.4	24.9	13.9	7.3	4.0	1.9	1.1	.5	.4	.4	.1
Palms	24.6	0	.2	.1	2.0	8.4	8.6	3.2	1.4	.6	.2	.1	0
Total	717.0	91.3	113.6	83.6	78.2	80.7	75.0	60.0	42.6	33.6	19.8	32.2	6.3
All species	3,802.8	278.0	384.0	398.7	426.6	462.8	451.7	392.4	303.6	220.7	150.8	259.4	73.8

[1] Columns do not add because of rounding.

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Table 5.–Total green weight of aboveground tree biomass (excluding foliage) on commercial forest land in the Southeast, by State and ownership[1]

State	Total, all ownerships	National Forest	Other public	Forest industry	Other private
			Million tons		
Florida	863.9	60.8	67.0	237.1	499.0
Georgia	1,554.6	74.8	54.6	261.0	1,164.3
North Carolina	1,518.6	102.4	40.6	136.8	1,238.6
South Carolina	1,014.0	60.9	43.4	172.2	737.4
Virginia	1,306.9	136.2	52.8	118.6	999.4
Total	6,258.1	435.2	258.3	925.8	4,638.8

[1] Columns do not add because of rounding.

Table 6.–Abovestump green weight distribution of wood and bark in tree components of softwoods, hard hardwoods, and soft hardwoods[1]

D.b.h. classes	Softwoods[2]			Hard hardwoods[4]			Soft hardwoods[5]		
	Saw log stem	Stem to 4-inch top	Tops and branches[3]	Saw log stem	Stem to 4-inch top	Tops and branches[3]	Saw log stem	Stem to 4-inch top	Tops and branches[3]
					Percent				
1	–	–	100	–	–	100	–	–	100
2	–	–	100	–	–	100	–	–	100
3	–	–	100	–	–	100	–	–	100
4	–	–	100	–	–	100	–	–	100
5	–	67	33	–	60	40	–	64	36
6	–	70	30	–	64	36	–	66	34
7	–	78	22	–	70	30	–	72	28
8	–	82	18	–	75	25	–	77	23
9	65	86	14	–	76	24	–	80	20
10	69	89	11	–	78	22	–	82	18
11	73	86	14	53	77	23	56	82	18
12	76	84	16	54	77	23	57	83	17
13	78	84	16	54	75	25	62	82	18
14	80	84	16	55	74	26	65	82	18
15	81	84	16	55	74	26	66	82	18
16	81	84	16	56	73	27	68	83	17
17	81	84	16	56	73	27	68	82	18
18	81	84	16	56	73	27	68	82	18
19	83	84	16	56	72	28	68	81	19
20	83	84	16	56	71	29	66	79	21

[1] Data based on over 4,000 sample trees.
[2] Softwoods: southern pines, white pine, hemlock, cypress, cedars, fir, and spruce.
[3] Trees 4 inches d.b.h. and less have similar utility as tops and branches of larger trees.
[4] Hard hardwoods: oaks, hickories, ash, beech, birch, walnut, dogwood, holly, locust, mulberry, persimmon, and hard maple.
[5] Soft hardwoods: basswood, black cherry, cottonwood, boxelder, buckeye, gums, soft maples, and yellow-poplar.

DEFINITIONS OF TERMS

Acceptable trees.—Growing-stock trees of commercial species that meet specified standards of size and quality, but not qualifying as desirable trees.

Basal area.—The area in square feet of the cross section at breast height of a single tree or of all the trees in a stand, usually expressed as square feet of basal area per acre.

Biomass.—The aboveground green weight of wood and bark in all live trees 1.0 inch d.b.h. and larger from the ground to the tip of the tree. All foliage is excluded, as is wood and bark in lateral limbs, secondary limbs, and twigs under 0.5 inch at their base.

Bole.—Green weight of wood and bark between a 1-foot stump and a 4-inch top outside bark in trees 5.0 inches d.b.h. and larger. Merchantable volume.

Commercial forest land.—Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization.

Commercial species.—Tree species suitable for industrial wood products.

Desirable trees.—Growing-stock trees of commercial species having no serious defects in quality that limit present or prospective use for timber products, of relatively high vigor, and containing no pathogens that may result in death or serious deterioration before rotation age.

Diameter class.—A classification of trees based on diameter outside bark (d.o.b.), measured at breast height (4½ feet above the ground). D.b.h. is the common abbreviation for diameter at breast height. Two-inch diameter classes are commonly used in Forest Survey, with the even inch the approximate midpoint for a class. For example, the 6-inch class includes trees 5.00 through 6.99 inches d.b.h., inclusive.

Forest industry lands.—Lands owned by companies or individuals operating wood-using plants.

Forest land.—Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use.

Growing-stock trees.—Live trees of commercial species qualifying as desirable or acceptable trees.

Growing-stock volume.—Net volume in cubic feet of growing-stock trees 5.0 inches d.b.h. and over from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs. (Net volume in primary forks is included.)

Hardwoods.—Dicotyledonous trees, usually broad-leaved and deciduous.

Soft hardwoods.—Soft-textured hardwoods, such as boxelder, red and silver maple, hackberry, loblolly-bay, sweetgum, yellow-poplar, magnolia, sweetbay, water tupelo, blackgum, sycamore, cottonwood, black cherry, willow, basswood, and elm.

Hard hardwoods.—Hard-textured hardwoods such as sugar maple, birch, hickory, dogwood, persimmon (forest grown), black locust, beech, ash, honeylocust, holly, black walnut, mulberry, and all commercial oaks.

Industrial wood.—All roundwood products except fuelwood.

Merchantable volume.—Volume of wood in cubic feet in trees of commercial species, measured from a 1-foot stump to a 4-inch top outside bark. Bole volume.

National Forest land.—Federal lands which have been legally designated as National Forests or purchase units, and other lands under the administration of the Forest Service, including experimental areas and Bankhead-Jones Title III lands.

Noncommercial species.—Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Other Federal lands.—Federal lands other than National Forests, including lands administered by the Bureau of Land Management, Bureau of Indian Affairs, and other Federal agencies.

Other public lands.—Publicly owned lands other than National Forests.

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Rotten trees.—Live trees of commercial species that do not contain at least one 12-foot saw log, or two noncontiguous saw logs, each 8 feet or longer, now or prospectively, primarily because of rot or missing sections, and with less than one-third of the gross tree volume in sound material.

Rough trees.—(a) Live trees of commercial species that do not contain at least one 12-foot saw log, or two noncontiguous saw logs, each 8 feet or longer, now or prospectively, primarily because of roughness, poor form, splits, and cracks, and with less than one-third of the gross tree volume in sound material; and (b) all live trees of noncommercial species.

Saplings.—Live trees 1.0 inch to 5.0 inches in diameter at breast height.

Saw log.—A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight, and with a minimum diameter inside bark for softwoods of 6 inches (8 inches for hardwoods).

Saw-log portion.—That part of the bole of sawtimber trees between the stump and the saw-log top.

Saw-log top.—The point on the bole of sawtimber trees above which a saw log cannot be produced. The minimum saw-log top is 7.0 inches d.o.b. for softwoods and 9.0 inches d.o.b. for hardwoods.

Softwoods.—Coniferous trees, usually evergreen, having needles or scale-like leaves.

Pines.—Yellow pine species which include loblolly, longleaf, slash, pond, shortleaf, pitch, Virginia, and Table Mountain pine.

Other softwoods.—Cypress, eastern redcedar, white cedar, eastern white pine, eastern hemlock, spruce, and fir.

Top.—The portion of the main stem and forks from a 4-inch outside bark diameter to the tips of the main stem and forks, plus all other limbs over 0.5 inch in diameter at their base.

Unproductive forest land.—Forest land incapable of producing 20 cubic feet per acre of industrial wood under natural conditions because of adverse site conditions.

Upper-stem portion.—That part of the main stem or fork of sawtimber trees above the saw-log top to a minimum top diameter 4.0 inches outside bark, or to the point where the main stem or fork breaks into limbs.

STATE TABLES

Detailed statistics on biomass in Southeastern States are shown in tables 7 through 31. There are five tables for each State. Values shown are numbers of trees, merchantable cubic volumes, total cubic volumes, merchantable green weights, and total green weights (excluding foliage). All values are shown by major timber species and by 2-inch diameter class.

Table 7.--Number of all live trees on commercial forest land, Florida, by species and diameter class, 1980

SPECIES	ALL CLASSES	DIAMETER CLASS											
		2	4	6	8	10	12	14	16	18	20	22-28	30+
	THOUSAND TREES												
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	122315	49626	26021	17056	8716	6689	5596	3000	2014	1226	599	563	13
LONGLEAF PINE	215537	47775	40413	35293	28533	29076	20947	9167	2798	613	163	159	0
POND PINE	55769	14851	15507	10673	6331	3802	2603	976	413	221	135	53	0
SHORTLEAF PINE	14002	3469	5214	2447	1093	685	616	467	110	54	26	21	0
SLASH PINE	1848986	576672	613619	360490	106101	61435	28126	13089	5920	2172	834	521	9
VIRGINIA PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER YELLOW PINES	214986	93742	80846	33947	14001	7831	2673	983	577	261	70	55	0
TOTAL YELLOW PINES	2471599	786135	762624	480100	224775	110110	80561	28284	11632	4549	1827	1372	22
OTHER SOFTWOODS:													
EASTERN WHITE PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
CYPRESS	937191	430369	200479	124180	61571	48329	25515	13676	6375	3116	1658	1669	252
OTHER SOFTWOODS	30210	12697	7167	4331	2256	1410	1025	737	368	153	37	27	0
TOTAL OTHER SOFTWOODS	967401	443066	207646	128511	63821	49747	26540	14413	6743	3271	1695	1696	252
SOFT HARDWOODS:													
SWEETGUM	253600	154464	47169	20001	13965	7270	4512	2679	1437	503	432	310	38
YELLOW POPLAR	16640	6705	3486	1554	932	623	706	275	80	115	126	36	0
TUPELO AND BLACKGUM	852712	499998	174635	77479	38519	23771	15976	9641	5277	3034	1760	2121	279
BAY AND MAGNOLIA	672309	426778	139710	51767	22240	13707	7626	4097	2042	1176	672	453	33
SOFT MAPLES	286799	181863	47915	23059	13723	7584	5529	3191	1697	720	320	381	17
OTHER SPECIES	113030	74413	19410	8577	4613	2300	1453	1042	494	293	109	122	4
TOTAL SOFT HARDWOODS	2195290	1346241	432335	184037	94192	55261	35804	21325	11027	5841	3439	3423	371
OAKS:													
BLACK	221	221	0	0	0	0	0	0	0	0	0	0	0
CHESTNUT	0	0	0	0	0	0	0	0	0	0	0	0	0
LAUREL	372537	235567	64288	27675	15600	11466	6997	4502	2317	1019	1066	1705	327
NORTHERN RED	0	0	0	0	0	0	0	0	0	0	0	0	0
SCARLET	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTHERN RED	24796	14898	4070	2432	1580	902	377	255	276	70	52	64	0
WATER	247185	167597	37726	17959	10431	5816	3113	1953	1080	664	359	390	95
WHITE	7261	2735	2323	947	390	205	149	304	133	17	49	9	0
OTHER OAKS	333302	225775	47184	22100	10464	8394	5512	3023	2899	2151	1648	2673	679
SCRUB OAKS	808417	641050	114992	31276	12526	5461	2200	596	247	67	0	0	0
TOTAL OAKS	1793719	1287843	270589	101589	51007	32246	18348	11433	6954	4594	3174	4841	1101
OTHER HARDWOODS:													
ASH	354756	222921	77166	27602	12036	6802	3163	2169	1311	670	450	244	22
HICKORY	43039	23698	7691	3459	3161	1468	1271	924	534	331	123	166	11
OTHER HARD HARDWOODS	151738	116761	25453	5014	2051	1000	764	251	130	177	46	60	11
TROPICALS AND MISC. SPP.	345171	237937	67087	23430	9997	3272	1436	831	373	164	133	77	39
PALMS	68380	826	859	2140	13609	33188	24211	8673	3250	1266	287	65	0
TOTAL OTHER HARDWOODS	963084	602159	179256	61651	40854	45730	30845	12846	5596	2608	1039	614	82
ALL SPECIES	6411099	4467444	1851650	956086	494649	293102	172098	88103	42154	20863	11174	11946	1828

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Table 8.--Merchantable cubic volume of all live trees on commercial forest land, Florida, by species and diameter class, 1980

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
						THOUSAND CUBIC FEET							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	592033	0	0	33174	49100	72774	105186	99567	78181	63342	39102	50009	2198
LONGLEAF PINE	1367946	0	0	67712	176936	337736	390041	236593	91573	27882	8959	10512	0
POND PINE	167718	0	0	21146	29685	36053	41442	22900	14604	10330	7204	4352	0
SHORTLEAF PINE	54089	0	0	7000	6658	6666	11593	12390	3937	2480	1736	1429	0
SLASH PINE	3785742	0	0	886052	958762	677429	518430	344365	211996	99134	48833	39351	1368
VIRGINIA PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER YELLOW PINES	375411	0	0	91502	90451	65341	44847	23072	18775	12930	4378	4115	0
TOTAL YELLOW PINES	6363539	0	0	1126586	1311792	1216001	1111539	738687	419066	216098	110212	109766	3566
OTHER SOFTWOODS:													
EASTERN WHITE PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
CYPRESS	2436499	0	0	317498	455012	469517	392034	292467	179030	114368	76792	103275	36506
OTHER SOFTWOODS	84207	0	0	9667	10536	14335	13855	15699	10793	6144	1530	1646	0
TOTAL OTHER SOFTWOODS	2520706	0	0	327165	465548	483852	405889	308166	189823	120512	78322	104923	36506
SOFT HARDWOODS:													
SWEETGUM	480353	0	0	40894	72559	74744	84384	77790	51147	24136	25335	24274	5090
YELLOW POPLAR	53101	0	0	3316	5458	6750	13480	6724	2587	4868	7125	2793	0
TUPELO AND BLACKGUM	1575055	0	0	179053	195210	219690	253536	222261	155485	115264	82840	124850	27466
BAY AND MAGNOLIA	738745	0	0	118623	117156	131191	117670	86148	59159	44280	31847	28135	4534
SOFT MAPLES	479394	0	0	55880	70782	72740	65388	70740	50683	27946	16529	26163	2343
OTHER SPECIES	158414	0	0	17776	24512	21325	22916	24205	17090	13158	6711	9726	995
TOTAL SOFT HARDWOODS	3485662	0	0	415542	485679	526440	577374	487868	336351	229652	170387	215941	40428
OAKS:													
BLACK	0	0	0	0	0	0	0	0	0	0	0	0	0
CHESTNUT	0	0	0	0	0	0	0	0	0	0	0	0	0
LAUREL	782046	0	0	63341	81348	106918	104960	93787	65510	60775	47274	116429	42304
NORTHERN RED	0	0	0	0	0	0	0	0	0	0	0	0	0
SCARLET	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTHERN RED	48230	0	0	4657	7181	8007	4866	5626	8001	2852	2672	4166	0
WATER	377461	0	0	45144	53970	56650	48889	45215	32930	29158	17249	32726	15530
WHITE	22904	0	0	1659	1842	1848	2791	6249	4613	691	2720	491	0
OTHER OAKS	853532	0	0	40675	45396	61862	70585	77267	60266	81466	75394	198931	121466
SCRUB OAKS	181572	0	0	55214	47170	35443	25071	10894	6133	1647	0	0	0
TOTAL OAKS	2266345	0	0	211090	236909	270728	257162	239038	197453	176591	145309	352745	179320
OTHER HARDWOODS:													
ASH	401203	0	0	61382	58834	64703	49257	51165	42372	27778	24544	19419	1749
HICKORY	133932	0	0	6510	15036	13828	20678	23810	16660	16238	7444	12016	1712
OTHER HARD HARDWOODS	64849	0	0	8314	9676	9397	12063	5776	4436	6981	2593	4490	1123
TROPICALS AND MISC. SPP.	164686	0	0	41809	40996	24668	17751	9607	8789	5009	6924	5093	4240
PALMS	1346936	0	0	7440	112357	461091	472763	172885	74852	32049	10245	3256	0
TOTAL OTHER HARDWOODS	2111808	0	0	125455	236899	573687	572512	263243	147109	88055	51750	44274	8824
ALL SPECIES	16748060	0	0	2205840	2736827	3070708	2924476	2037202	1289804	830908	555980	827651	268664

Table 9.–Total cubic volume of all live trees on commercial forest land, Florida, by species and diameter class, 1980

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
	THOUSAND CUBIC FEET												
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	7212?6	81?0	26?15	47?15	59?17	?4863	120405	112874	66156	71179	43858	55956	?452
LONGLEAF PINE	1671729	14949	67?C?	122?8?	212776	389992	442664	266200	162515	31123	10000	11722	0
POND PINE	236?14	2720	12097	28141	35794	42217	47924	26282	16696	11787	8205	4951	0
SHORTLEAF PINE	70539	925	6049	9386	8266	7746	13284	14075	4451	2795	1954	1606	0
SLASH PINE	?661424	17?134	863721	1250357	11?233?	784632	589365	367895	237484	110764	54426	43780	1538
VIRGINIA PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER YELLOW PINES	586?22	26017	92261	137791	111526	100054	?1502	26229	21195	14535	4908	4?14	0
TOTAL YELLOW PINES	?9?8414	227845	1087645	1591366	1560519	1409504	12?5134	833555	470499	242193	123351	122?23	3990
OTHER SOFTWOODS:													
EASTERN WHITE PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
CYPRESS	3623121	90435	237427	532?00	63273?	618604	5?3306	370718	224705	142191	94959	128287	47754
OTHER SOFTWOODS	112491	2142	7?97	13756	12969	17?96	16520	18490	12640	7177	1803	1906	0
TOTAL OTHER SOFTWOODS	3735?12	92578	245424	545756	645704	635690	519?26	3?9206	237345	149366	96762	130195	47754
SOFT HARDWOODS:													
SWEETGUM	647?0?	25735	46692	?0356	90056	88548	97867	89305	58555	27475	2?823	27?81	5931
YELLOW POPLAR	?7276	1623	4142	4639	6511	7783	15342	7?09	2915	5527	?021	3169	0
TUPELO AND BLACKGUM	2337142	119201	206?1?	2?6741	253?16	275373	312986	273?92	191492	142165	102733	157?00	358?8
BAY AND MAGNOLIA	1176525	8?36?	1?15?8	176651	148553	159364	140904	102521	70079	52241	37591	33470	5204
SOFT MAPLES	704577	41386	70923	79781	68996	?8489	102720	64505	60719	33359	19612	31279	2808
OTHER SPECIES	229803	14705	22977	25?05	30392	25?06	26991	28437	19693	15246	7774	1139?	1179
TOTAL SOFT HARDWOODS	5162334	290690	512246	613773	61831?	645117	696?12	5?6269	403453	276013	204554	263997	51090
OAKS:													
BLACK	3?	35	0	0	0	0	0	0	0	0	0	0	0
CHESTNUT	0	0	0	0	0	0	0	0	0	0	0	0	0
LAUREL	1133?5?	43802	67189	?8792	109481	138714	134181	119364	62624	76653	60431	147954	54172
NORTHERN RED	0	0	0	0	0	0	0	0	0	0	0	0	0
SCARLET	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTHERN RED	?9047	2504	4034	7793	9607	10215	6087	6927	9?7?	3476	3247	5079	0
WATER	563150	31845	40256	71?4?	72937	72964	62?8?	56884	41360	36311	21669	40?34	19460
WHITE	31923	3?6	2493	2555	2412	2334	3474	7747	5703	?51	3344	631	0
OTHER OAKS	11?7334	37600	42533	?9307	?2833	61314	90926	98?66	101791	103083	95104	250539	154236
SCRUB OAKS	463751	96152	112053	86900	?4?2?	46529	32331	13?36	7797	2121	0	0	0
TOTAL OAKS	3453?04	214325	268560	336?91	321496	352070	329?87	302?26	249351	222497	183795	445037	227?08
OTHER HARDWOODS:													
ASH	607003	45947	73582	?6440	72?32	76605	57353	59177	48902	31600	28006	22216	2140
HICKORY	180?66	3944	9015	10356	19613	17372	25420	28997	20297	19590	9025	14?90	2047
OTHER HARD HARDWOODS	137?23	24569	29424	12?6?	12753	11?54	14972	7089	5390	8638	3147	5682	1437
TROPICALS AND MISC. SPP.	351764	47624	74903	64774	56?80	32522	23502	12592	11713	5706	6964	6504	5?63
PALMS	1406?13	168	1240	7879	117415	479233	491133	1?1801	79259	34213	10852	3420	0
TOTAL OTHER HARDWOODS	26?3?68	122252	188161	184119	278693	617586	612380	289656	165561	100947	59994	52512	11507
ALL SPECIES	24003732	947691	2302236	3271907	3454930	3659967	3423239	2401514	1526209	991008	668456	1014364	342209

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Table 10.–Merchantable green weight of all live trees on commercial forest land, Florida, by species and diameter class, 1980

SPECIES	ALL CLASSES	DIAMETER CLASS											
		2	4	6	8	10	12	14	16	18	20	22-26	30+
	HUNDRED THOUSAND POUNDS												
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	434040	0	0	25080	36413	53657	77215	72798	57001	46116	28434	36332	1594
LONGLEAF PINE	1057462	0	0	64073	157309	261464	306292	187142	72752	22251	7166	8423	0
POND PINE	134576	0	0	15578	21254	25536	29569	16402	10487	7428	5184	3136	0
SHORTLEAF PINE	38366	0	0	4079	4784	4615	8332	9892	2022	1776	1243	1023	0
SLASH PINE	2905549	0	0	668904	747705	515356	397844	265462	163933	76797	37892	30573	1081
VIRGINIA PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER YELLOW PINES	25358	0	0	6095	5959	5749	3098	1607	1331	927	317	296	0
TOTAL YELLOW PINES	4834381	0	0	839609	1006624	913381	857275	566766	320309	163646	83092	82454	2675
OTHER SOFTWOODS:													
EASTERN WHITE PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
CYPRESS	1611280	0	0	164003	264279	292457	271111	214593	136566	69543	61475	65132	32119
OTHER SOFTWOODS	65583	0	0	7013	7818	10359	10511	12500	8614	5040	1306	1422	0
TOTAL OTHER SOFTWOODS	1676863	0	0	171816	272097	302816	281622	227093	145382	94583	62781	86554	32119
SOFT HARDWOODS:													
SWEETGUM	355975	0	0	30577	52843	54023	62036	57553	38162	18176	19235	18709	4061
YELLOW POPLAR	37793	0	0	2256	3741	4679	9576	9812	1867	3549	5237	2074	0
TUPELO AND BLACKGUM	1043649	0	0	99624	116319	137163	162241	150070	109176	63949	62769	98640	23298
BAY AND MAGNOLIA	474051	0	0	65038	70463	82354	72326	57607	42239	32965	24695	22539	3825
SOFT MAPLES	359911	0	0	40906	53718	55597	62270	52926	38592	21364	12675	20074	1767
OTHER SPECIES	104299	0	0	11269	15730	13661	14293	15636	11544	9264	4803	7138	759
TOTAL SOFT HARDWOODS	2375678	0	0	249874	312814	348277	362742	338606	241580	169267	129414	169374	33730
OAKS:													
BLACK	0	0	0	0	0	0	0	0	0	0	0	0	0
CHESTNUT	0	0	0	0	0	0	0	0	0	0	0	0	0
LAUREL	634694	0	0	48536	65780	87967	84464	76463	53676	49885	38769	95070	34059
NORTHERN RED	0	0	0	0	0	0	0	0	0	0	0	0	0
SCARLET	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTHERN RED	39527	0	0	3304	5142	6161	4249	4872	7005	2524	2413	3657	0
WATER	310454	0	0	35988	43084	46143	40015	37584	27556	24488	14498	27405	12693
WHITE	19006	0	0	1250	1495	1495	2345	5241	3896	585	2328	421	0
OTHER OAKS	777977	0	0	32089	36515	50700	60173	67990	72351	74915	70233	190504	122507
SCRUB OAKS	193143	0	0	23472	30952	36084	24600	10287	5636	1510	0	0	0
TOTAL OAKS	1974791	0	0	164639	203718	229150	215646	202437	170122	153907	126256	317257	169459
OTHER HARDWOODS:													
ASH	258559	0	0	45214	40652	42305	31257	31529	25386	16379	14141	10755	941
HICKORY	110208	0	0	4747	11657	11276	16689	19599	13630	13727	6399	10502	1572
OTHER HARD HARDWOODS	54041	0	0	6262	8027	7903	9906	5035	3896	6186	2324	4209	1069
TROPICALS AND MISC. SPP.	107221	0	0	32080	28592	15999	10306	5449	4658	2552	3354	2411	1820
PALMS	471451	0	0	2604	3933	101387	165475	60512	26197	11216	3585	1139	0
TOTAL OTHER HARDWOODS	1002280	0	0	90907	128264	238870	233635	122124	73969	50070	29803	29016	5422
ALL SPECIES	11803993	0	0	1537045	1923917	2037494	1964270	1457026	951362	631473	433346	684655	243465

Table 11.–Total green weight of all live trees on commercial forest land, Florida, by species and diameter class, 1980

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
						HUNDRED THOUSAND POUNDS							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	527139	5810	16600	36032	44370	62c10	68376	62526	64276	51620	31891	40645	1779
LONGLEAF PINE	129756	10906	48027	89771	1c5105	301920	347593	210568	81444	24637	7998	9392	0
POND PINE	16910	1941	7934	20754	25626	29697	34184	18021	11994	8479	5903	3566	0
SHORTLEAF PINE	50044	725	4307	6260	5765	5594	9546	10102	3192	2002	1399	1150	0
SLASH PINE	4300701	12c012	628667	942603	906347	596082	452280	299015	163652	65803	42230	34013	1167
VIRGINIA PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER YELLOW PINES	400523	19028	65575	69654	73453	67224	35591	18273	15029	10425	3557	3324	0
TOTAL YELLOW PINES	6745066	160422	771316	1104474	1220666	1064327	907564	639307	359587	163365	92978	97092	2976
OTHER SOFTWOODS:													
EASTERN WHITE PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
CYPRESS	2397234	60869	175026	273762	367446	306476	347654	271934	171427	111360	76030	105013	42123
OTHER SOFTWOODS	87303	1638	5926	11124	9037	12342	12526	14717	10316	5086	1539	1647	0
TOTAL OTHER SOFTWOODS	2484534	70527	181752	284886	377085	367110	360380	286651	181745	117246	77569	107460	42123
SOFT HARDWOODS:													
SWEETGUM	465969	21221	38527	45206	65574	64704	71950	56066	43686	20093	21861	21336	4729
YELLOW POPLAR	47780	1163	2662	3156	4463	5393	10694	5444	2104	4030	5896	2353	0
TUPELO AND BLACKGUM	159385	95734	164579	148489	151196	171878	200203	164940	134421	103702	77977	124652	30612
BAY AND MAGNOLIA	76571	84067	111524	96397	89351	99987	86584	68537	50021	38676	29150	26817	4459
SOFT MAPLES	526099	36986	80786	58332	67548	67032	74696	63231	46642	25496	15040	23996	2143
OTHER SPECIES	154489	10908	17021	16232	19503	16043	16029	19359	13435	10732	5504	8364	899
TOTAL SOFT HARDWOODS	3508332	224039	365281	367606	397627	426237	460156	406579	269709	203529	155508	207521	42842
OAKS:													
BLACK	36	36	0	0	0	0	0	0	0	0	0	0	0
CHESTNUT	0	0	0	0	0	0	0	0	0	0	0	0	0
LAUREL	932412	42877	81074	75592	68511	114144	107973	97304	67667	62924	49501	120617	43618
NORTHERN RED	0	0	0	0	0	0	0	0	0	0	0	0	0
SCARLET	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTHERN RED	56966	2469	3070	5490	7015	7063	5313	5997	8645	3078	2932	4700	0
WATER	475139	31134	36553	56971	59303	59423	50615	47270	34611	30491	18207	34199	16154
WHITE	26463	340	2660	1922	1890	1389	2919	6499	4616	721	2860	541	0
OTHER OAKS	1076400	33606	56740	54403	50529	66040	77502	86294	91750	94789	86596	239940	155543
SCRUB OAKS	491905	10e539	112032	100097	89181	48161	31715	13066	7166	1946	0	0	0
TOTAL OAKS	3059129	219057	292073	294275	276429	298126	276237	256436	214663	193949	162176	400197	215315
OTHER HARDWOODS:													
ASH	413694	37517	59963	65226	50351	50083	36404	36456	29309	18754	16133	12306	1150
HICKORY	149192	3679	7924	7541	15356	14164	20760	23868	16046	16574	7757	12640	1861
OTHER HARD HARDWOODS	116376	21039	24664	9541	10586	9975	12287	6176	4729	7649	2820	5321	1390
TROPICALS AND MISC. SPP.	250492	39903	60144	49812	39143	21113	13646	7143	6211	3422	4349	3081	2525
PALMS	492349	58	434	2759	41106	167747	171901	63630	27746	11974	3797	1197	0
TOTAL OTHER HARDWOODS	1422065	102195	153329	134679	156542	263082	254996	137277	84643	58373	34856	34745	6946
ALL SPECIES	17278626	786240	1743745	2266322	2428351	2448876	2320529	1726252	1130747	756462	523087	842015	310202

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Table 12.–Number of all live trees on commercial forest land, Georgia, by species and diameter class, 1972

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
						THOUSAND TREES							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	2548802	1189422	606716	349546	184602	98440	58096	34206	15966	7052	2709	1796	51
LONGLEAF PINE	205304	52465	46684	32155	25245	21422	15802	7892	2558	719	250	112	0
POND PINE	66817	16467	18367	14313	6706	4923	3233	1453	851	329	93	77	0
SHORTLEAF PINE	1146177	544366	267474	160301	80867	41269	20676	7603	2325	793	209	91	3
SLASH PINE	1858673	787484	524122	303733	134987	57386	29067	13504	5399	1786	748	440	15
VIRGINIA PINE	355786	195954	63633	38928	21722	10260	3545	1269	369	96	10	0	0
OTHER YELLOW PINES	19541	9207	2957	2013	1792	1156	1173	639	327	157	45	66	7
TOTAL YELLOW PINES	6201100	2795365	1569953	900989	456121	234863	131792	66566	27795	10932	4064	2584	76
OTHER SOFTWOODS:													
EASTERN WHITE PINE	29936	14160	6159	3412	1746	1306	1023	536	680	302	283	309	16
CYPRESS	278910	162099	48184	27658	17020	10478	6650	3566	1615	668	322	364	86
OTHER SOFTWOODS	64695	48500	10726	2698	1265	894	303	129	79	32	24	30	13
TOTAL OTHER SOFTWOODS	373541	224759	65071	33768	20033	12680	7976	4231	2574	1002	629	703	115
SOFT HARDWOODS:													
SWEETGUM	1758042	1187205	332694	117163	55684	32136	16526	8958	4140	1725	943	830	56
YELLOW POPLAR	320431	181012	55005	31543	17732	12591	9742	5575	3685	1726	825	676	117
TUPELO AND BLACKGUM	1599717	1100637	239969	106612	63606	40620	23618	12787	6443	2852	1220	1219	134
BAY AND MAGNOLIA	301631	210680	48352	20384	10047	5772	3026	2029	685	349	178	105	24
SOFT MAPLES	981626	730959	147200	47333	25477	13985	7128	4426	2243	1389	713	697	76
OTHER SPECIES	494254	357186	83232	25522	13129	6521	3832	2352	1272	648	250	296	14
TOTAL SOFT HARDWOODS	5455701	3767679	906452	348577	185675	111625	63874	36127	18468	8689	4069	4025	421
OAKS:													
BLACK	130667	81408	22176	8276	6949	4370	3117	1995	1143	592	328	296	17
CHESTNUT	176015	93502	38776	15416	9615	7041	4524	3016	1721	1071	586	489	58
LAUREL	364729	239042	86737	23426	12621	7932	4580	3290	2257	1415	1077	1803	349
NORTHERN RED	80032	41138	15599	9663	4464	3583	2078	1180	798	671	391	412	55
SCARLET	104011	54053	17345	10127	8562	5547	3790	2202	1249	724	231	173	8
SOUTHERN RED	358534	220847	71452	31237	15734	9081	4650	2706	1294	641	461	361	68
WATER	676946	465160	124513	42564	19679	10516	6258	3487	2146	1153	567	767	96
WHITE	346096	187600	79696	32745	18340	11646	6966	4293	2094	1079	712	846	77
OTHER OAKS	364136	226479	66204	28489	17479	9791	6472	3616	2035	1068	946	1229	328
SCRUB OAKS	554304	433453	79975	23591	11128	3868	1476	503	136	133	29	6	6
TOTAL OAKS	3155470	2042702	582473	225534	124971	73375	43911	26290	14673	8547	5348	6384	1062
OTHER HARDWOODS:													
ASH	214063	143819	37657	12980	9861	4656	2935	1550	722	435	221	212	15
HICKORY	611617	431634	93093	39481	19313	12093	7108	4281	2263	1179	554	582	36
OTHER HARD HARDWOODS	1182257	958680	171072	34592	8847	3354	2372	1546	622	588	251	299	34
TROPICALS AND MISC. SPP.	856116	662210	137160	38124	11960	4055	1620	409	356	117	56	49	0
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	2864053	2196343	438982	125177	48981	24158	14035	7786	3963	2319	1082	1142	85
ALL SPECIES	16049665	11026848	3562931	1634045	835781	456701	261588	141000	67673	31489	15212	14638	1759

Table 13.–Merchantable cubic volume of all live trees on commercial forest land, Georgia, by species and diameter class, 1972

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
						THOUSAND CUBIC FEET							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	6200867	0	0	834134	1041149	1059798	1075533	913085	567719	350099	174399	156386	8565
LONGLEAF PINE	1254681	0	0	93445	176446	206401	324906	218097	96279	35432	14483	9392	0
POND PINE	278925	0	0	33678	38932	51522	59614	37664	30455	14949	5568	6323	0
SHORTLEAF PINE	2042640	0	0	365785	476308	460584	388632	263313	86236	39523	14024	7608	427
SLASH PINE	3797690	0	0	786335	846525	751003	615885	394180	217337	95475	50268	36159	2763
VIRGINIA PINE	463610	0	0	109971	132986	114197	57509	30826	12744	4904	673	0	0
OTHER YELLOW PINES	98926	0	0	4659	10514	12439	22934	17300	12947	7612	3252	6030	1239
TOTAL YELLOW PINES	14137939	0	0	2228207	2724860	2735944	2545413	1814165	1043717	547994	262627	221696	13114
OTHER SOFTWOODS:													
EASTERN WHITE PINE	155301	0	0	9454	9467	13769	17692	13484	24155	14821	16309	31785	2365
CYPRESS	663802	0	0	64816	108234	114084	117942	90695	62654	29792	17377	24289	13919
OTHER SOFTWOODS	35673	0	0	5206	5566	7753	4173	2072	2076	1561	1645	3194	2427
TOTAL OTHER SOFTWOODS	854776	0	0	99476	123267	135606	139807	106251	88885	46174	37331	59266	18711
SOFT HARDWOODS:													
SWEETGUM	1819355	0	0	245093	310830	351225	307192	240146	149955	77329	56052	73267	6266
YELLOW POPLAR	981790	0	0	82671	106026	140757	175153	144499	126007	74150	40260	68626	17437
TUPELO AND BLACKGUM	2151805	0	0	262621	356466	407052	383669	297518	189583	104950	48632	66511	14801
BAY AND MAGNOLIA	321543	0	0	55882	60777	57054	51197	45923	19966	12160	7560	7704	3318
SOFT MAPLES	794940	0	0	120506	137390	135153	107533	93447	60652	50996	30065	50913	8283
OTHER SPECIES	423795	0	0	57029	70014	65218	62795	56662	42357	29009	14404	25107	2000
TOTAL SOFT HARDWOODS	6493228	0	0	824004	1041507	1156459	1086749	878395	588522	347594	202973	312330	53905
OAKS:													
BLACK	263291	0	0	19131	37155	43648	42367	43303	33669	24494	16861	19961	2502
CHESTNUT	451969	0	0	35262	52370	68903	68905	65590	52735	40529	27768	33473	6434
LAUREL	779340	0	0	57257	77016	81924	74636	76622	67311	56580	54398	168916	64480
NORTHERN RED	262127	0	0	27606	26603	37389	35978	29892	28013	29553	22195	35386	9510
SCARLET	335336	0	0	27074	48030	56825	60665	51657	38721	27334	12709	12138	765
SOUTHERN RED	464742	0	0	67670	75687	81956	65051	56313	36660	23361	20876	26114	10646
WATER	748816	0	0	115247	114956	108664	106762	77332	67550	45587	29500	26507	16713
WHITE	776656	0	0	83110	104451	126662	117156	107749	69826	45614	39752	69876	12462
OTHER OAKS	707311	0	0	64736	87934	85896	68782	76766	57945	36971	42615	103674	81768
SCRUB OAKS	137481	0	0	37630	42228	25114	16353	7631	2986	3515	937	237	650
TOTAL OAKS	4967075	0	0	535127	666630	717183	676655	592457	459422	333538	267611	536492	185970
OTHER HARDWOODS:													
ASH	292874	0	0	32211	51636	48991	49115	37044	23729	17274	12126	18204	2544
HICKORY	761000	0	0	86491	103376	119626	120297	105479	78115	54732	33165	53683	5836
OTHER HARD HARDWOODS	286559	0	0	64019	41866	32161	38784	34608	19327	21032	11708	19189	4263
TROPICALS AND MISC. SPP.	198056	0	0	76181	50315	30575	18568	6752	7675	3286	1848	2856	0
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	1538491	0	0	258902	247195	231353	226764	183883	128846	96324	58847	94134	12643
ALL SPECIES	27991509	0	0	3945716	4803459	4976545	4676178	3575151	2305392	1371624	828981	1224112	284343

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Table 14.—Total cubic volume of all live trees on commercial forest land, Georgia, by species and diameter class, 1972

SPECIES	ALL CLASSES	DIAMETER CLASS											
		2	4	6	8	10	12	14	16	18	20	22-28	30+
	THOUSAND CUBIC FEET												
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	8315795	210104	699850	1194483	1270961	1236637	1231423	1035507	663005	393545	195609	175097	9574
LONGLEAF PINE	1562174	16750	83659	130150	212430	330717	368936	245502	107849	39582	16148	10451	0
POND PINE	350912	3020	17696	45156	46888	60299	69103	43255	34644	17088	6364	7199	0
SHORTLEAF PINE	2805635	87902	259127	504022	575405	535627	445291	231113	97545	44588	15789	8547	479
SLASH PINE	5641480	226983	812241	1109322	1028852	969489	700523	444307	243733	106709	55998	40237	3086
VIRGINIA PINE	763427	59519	141125	145409	160280	134007	66638	35487	14594	5600	768	0	0
OTHER YELLOW PINES	123343	2832	5615	6676	12566	14483	26391	19415	14769	8644	3677	6778	1497
TOTAL YELLOW PINES	19562766	607110	2019313	3135218	3307382	3181459	2908305	2054586	1176339	615756	294353	248309	14636
OTHER SOFTWOODS:													
EASTERN WHITE PINE	188513	1682	4744	12393	11571	16214	20649	15660	27962	17121	21130	36644	2743
CYPRESS	989700	29692	61880	144269	150570	150291	151773	114657	78212	36987	21660	30704	19005
OTHER SOFTWOODS	63749	8961	10359	7947	7102	9409	4996	2456	2416	1803	1885	3652	2759
TOTAL OTHER SOFTWOODS	1241962	40335	76983	164609	169243	175914	177420	132773	108592	55911	44675	71000	24507
SOFT HARDWOODS:													
SWEETGUM	2775935	213268	343209	364711	387351	416616	356853	276223	171745	88606	63818	83898	9637
YELLOW POPLAR	1262410	41603	79574	111331	126583	162606	199617	163861	142676	83802	52325	78252	20180
TUPELO AND BLACKGUM	3314861	261231	294819	393265	463626	509175	474130	365355	232653	129638	60680	110113	19976
BAY AND MAGNOLIA	507519	35473	65666	82537	76935	69869	61397	54993	23771	14542	9002	9333	4001
SOFT MAPLES	1405606	173887	231658	173778	174893	165644	130467	112867	73043	61317	36384	61377	10293
OTHER SPECIES	701117	78224	101644	82001	87596	78421	74763	67382	49550	32684	16853	29451	2346
TOTAL SOFT HARDWOODS	9967450	803686	1116770	1207623	1317186	1402331	1297227	1040681	693438	410589	239062	372424	66433
OAKS:													
BLACK	411800	18404	28796	29451	49306	55900	53569	54416	42042	30355	21048	25403	3110
CHESTNUT	638470	16543	43481	51107	68298	86905	86809	81925	65472	50639	34717	42293	8281
LAUREL	1158205	53791	83818	89532	103637	106294	95168	97715	65634	72001	69125	216647	84843
NORTHERN RED	389427	10330	19844	38120	34333	47262	45036	37501	34901	37031	27988	44910	12171
SCARLET	466772	16356	20099	38642	62536	72054	76118	63975	48761	35325	16022	15727	1155
SOUTHERN RED	756678	55976	84024	111598	103563	105286	81343	69612	45282	28682	26070	32120	13122
WATER	1250868	106429	151125	181194	154831	140190	135347	97801	84610	57286	36837	83983	21235
WHITE	1127879	41542	87126	123188	137424	160587	146939	134009	86929	56895	49525	87650	15865
OTHER OAKS	1031389	42067	67755	102013	118217	110607	113261	96778	72724	46422	53528	130095	77722
SCRUB OAKS	344189	62651	81853	59025	57138	32693	25875	12749	4391	5498	1209	297	810
TOTAL OAKS	7575677	426089	667921	823870	889285	917978	859465	746481	570746	420134	336069	679325	238314
OTHER HARDWOODS:													
ASH	417819	29714	34667	46670	63702	57936	57302	42887	27349	19854	13930	20831	2977
HICKORY	1185616	87448	118279	138752	137075	150642	148043	129255	95485	66527	40942	65671	7497
OTHER HARD HARDWOODS	781011	217147	209712	77016	50243	40171	48654	43285	24126	26507	14466	24303	5379
TROPICALS AND MISC. SPP.	581450	136510	169650	112503	68587	40252	24541	8880	10067	4279	2452	3729	0
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	2965896	470819	532308	374941	319607	289001	278540	224307	157029	117167	71790	114534	15853
ALL SPECIES	41313751	2348039	4413295	5706261	6002703	5966683	5520957	4198828	2706144	1619557	985949	1485592	359743

Table 15.—Merchantable green weight of all live trees on commercial forest land, Georgia, by species and diameter class, 1972

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
						HUNDRED THOUSAND POUNDS							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	4582169	0	0	631217	773860	787175	790926	668254	428927	255051	120888	113657	6214
LONGLEAF PINE	975971	0	0	67522	136337	221320	254661	172297	76482	28249	11572	7531	0
POND PINE	199982	0	0	24680	27650	36444	42667	26964	21859	10741	4022	4555	0
SHORTLEAF PINE	1423159	0	0	230750	328082	332641	279741	145987	61639	28324	10044	5446	305
SLASH PINE	2904452	0	0	586890	659164	571020	472419	303798	168004	73963	38944	28082	2168
VIRGINIA PINE	358046	0	0	93133	100627	84941	42715	22856	9445	3631	498	0	0
OTHER YELLOW PINES	68800	0	0	3319	7464	8346	15843	11844	9031	5329	2314	4335	973
TOTAL YELLOW PINES	10512579	0	0	1637711	2033584	2041889	1898972	1352000	775587	405288	194282	163606	9660
OTHER SOFTWOODS:													
EASTERN WHITE PINE	102683	0	0	6495	6342	9147	11985	9126	16204	9822	11949	20148	1465
CYPRESS	444173	0	0	42751	62779	71034	62056	67341	48154	23588	14005	20088	12377
OTHER SOFTWOODS	27220	0	0	4267	4322	5829	3112	1556	1580	1196	1246	2360	1752
TOTAL OTHER SOFTWOODS	574076	0	0	53513	73443	86010	97153	78023	65938	34606	27200	42596	15594
SOFT HARDWOODS:													
SWEETGUM	1350614	0	0	168825	226538	256427	225797	177482	111779	58165	42585	56461	6555
YELLOW POPLAR	697131	0	0	56346	72516	97491	123964	103500	91065	53999	33956	51039	13253
TUPELO AND BLACKGUM	1380033	0	0	144416	211259	253993	245439	199812	132431	76030	36122	67934	12595
BAY AND MAGNOLIA	201239	0	0	30457	35754	34493	31684	30896	14200	8984	5832	6162	2777
SOFT MAPLES	596605	0	0	87682	104101	103415	78079	69782	45966	38962	23050	39055	6311
OTHER SPECIES	279444	0	0	36670	44747	42523	38918	37101	28919	19647	10314	18780	1628
TOTAL SOFT HARDWOODS	4505066	0	0	544600	694915	768339	743881	618573	424362	255987	151859	239431	43119
OAKS:													
BLACK	254445	0	0	18380	34126	39851	38698	38452	29589	21330	14619	17252	2148
CHESTNUT	356019	0	0	26987	39968	53571	53002	51525	42173	32797	22735	27621	5440
LAUREL	631272	0	0	42985	62254	67431	60127	62705	55211	46459	44600	137732	51768
NORTHERN RED	231705	0	0	21012	21566	31109	29512	24681	23206	24551	18489	29569	8008
SCARLET	294698	0	0	23688	42210	50371	54359	44044	33644	23594	10919	10399	670
SOUTHERN RED	372653	0	0	44943	54021	62341	56435	48651	32016	20676	18752	24206	10609
WATER	613862	0	0	91174	93423	88550	87396	64121	56477	38265	24789	55782	13885
WHITE	640046	0	0	63426	82164	102655	98154	90486	58927	38729	33982	60459	11060
OTHER OAKS	608856	0	0	47031	69815	71466	74695	66195	50713	32924	38600	96883	60534
SCRUB OAKS	146511	0	0	43927	45619	26128	16049	7264	2748	3192	840	210	534
TOTAL OAKS	4150067	0	0	423555	545166	593473	568427	498926	384708	282517	228325	460315	164655
OTHER HARDWOODS:													
ASH	188217	0	0	23783	35611	32040	31107	22822	14239	10198	6970	10125	1322
HICKORY	617102	0	0	63063	79820	96948	98410	86694	64922	46183	28404	47258	5400
OTHER HARD HARDWOODS	237274	0	0	48139	33725	26792	32782	29298	16692	18285	10037	17486	4038
TROPICALS AND MISC. SPP.	140232	0	0	59776	35524	20128	12186	4246	4277	1746	930	1417	0
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	1182825	0	0	194761	184680	175908	174487	143060	100130	76412	46341	76286	10760
ALL SPECIES	20924613	0	0	2854140	3531788	3685619	3482920	2690582	1750725	1054810	648007	982234	243768

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Table 16.--Total green weight of all live trees on commercial forest land, Georgia, by species and diameter class, 1972

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
						HUNDRED THOUSAND POUNDS							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	6076214	150178	447560	904654	944696	916566	905578	757687	483672	286694	142323	127260	6944
LONGLEAF PINE	1206502	12233	59277	93670	164109	255567	289179	193956	65670	31553	12905	8383	0
POND PINE	250537	2165	11454	33403	33546	42651	49293	30975	25008	12277	4580	5185	0
SHORTLEAF PINE	1964561	70431	188224	316769	396220	386969	320358	165933	69947	31943	11306	6119	342
SLASH PINE	4257709	166032	577116	826442	799167	661061	537321	342395	168414	82671	43431	31255	2404
VIRGINIA PINE	579571	43464	100109	123439	121561	99669	49485	26310	10816	4148	568	0	0
OTHER YELLOW PINES	85928	2070	3974	4561	8922	9722	18231	13526	10301	6049	2615	4671	1066
TOTAL YELLOW PINES	14421022	446573	1387714	2302936	2468223	2374205	2169445	1530982	874030	455335	217728	183073	10776
OTHER SOFTWOODS:													
EASTERN WHITE PINE	124613	1243	3120	8520	7749	10773	13990	10600	18757	11344	13789	23230	1698
CYPRESS	661492	22669	45753	72376	67355	93484	105540	85117	60109	29299	17460	25410	16920
OTHER SOFTWOODS	48539	6845	7699	6513	5515	7061	3725	1641	1840	1380	1429	2695	1993
TOTAL OTHER SOFTWOODS	834844	30757	56572	87409	100619	111318	123255	97556	80706	42023	32678	51338	20611
SOFT HARDWOODS:													
SWEETGUM	2109388	175866	283186	281928	282327	304151	262307	204166	128032	66646	48463	64646	7646
YELLOW POPLAR	894281	30066	54581	75891	86569	112626	141260	117372	103103	61038	36404	58035	15734
TUPELO AND BLACKGUM	2207585	209734	235483	215602	274751	317662	303192	245358	162593	93971	45115	86737	17367
BAY AND MAGNOLIA	323601	25832	45112	44832	45239	42224	37975	36976	16896	10746	6946	7471	3352
SOFT MAPLES	1045490	130093	165534	126623	132484	126734	94734	84273	55354	46843	27890	47081	7847
OTHER SPECIES	478114	59550	75400	52815	55978	51117	46327	43974	33630	23134	12066	22010	1913
TOTAL SOFT HARDWOODS	7058459	631141	859296	797091	877348	954516	885795	732119	499808	302376	178904	285982	53479
OAKS:													
BLACK	371706	17854	25685	28354	45294	50806	48910	48316	36960	26434	18250	21971	2670
CHESTNUT	508762	16873	38076	39116	52103	67573	66790	64358	52360	40982	28409	35125	6997
LAUREL	953170	52228	75503	67014	83759	87491	76653	79755	70236	59108	56609	176638	68116
NORTHERN RED	322639	9998	17673	28991	27626	39325	36935	30964	28913	30760	23305	37511	10238
SCARLET	412046	15722	18196	33817	54949	63666	68203	56193	42375	30497	13765	13476	987
SOUTHERN RED	619457	54135	75947	73730	73688	60069	70561	60143	39532	25390	23416	29766	13078
WATER	1052596	103366	136357	143140	125819	114236	110768	81069	70736	48080	30953	70430	17642
WHITE	930228	36064	72256	93960	108082	130134	123112	112538	73356	48309	42336	76001	14080
OTHER OAKS	887695	39051	58735	74102	93642	92199	95291	83450	63648	41343	48484	121381	76169
SCRUB OAKS	364359	69666	81651	68662	61745	34009	25421	12155	4048	4988	1085	263	666
TOTAL OAKS	6422658	414957	600479	650886	727107	759710	722644	628941	482164	355691	286672	582564	210643
OTHER HARDWOODS:													
ASH	280846	24253	28263	34529	43940	37887	36297	26420	16410	11719	8004	11579	1545
HICKORY	975735	80884	103569	101054	105803	122036	121105	106233	79349	56126	35056	57577	6941
OTHER HARD HARDWOODS	652552	182969	175810	57975	40518	33455	41134	36676	20853	23062	12847	22152	5101
TROPICALS AND MISC. SPP.	446109	114263	135787	88415	48458	26502	16124	5583	5615	2283	1233	1846	0
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	2355242	402369	443429	281973	238719	219882	214660	174912	122227	93190	57140	93154	13587
ALL SPECIES	31092225	1925797	3347492	4120897	4412016	4419631	4115799	3164512	2058935	1248817	773122	1196111	309096

Table 17.–Number of all live trees on commercial forest land, North Carolina, by species and diameter class, 1974

SPECIES	ALL CLASSES	DIAMETER CLASS											
		2	4	6	8	10	12	14	16	18	20	22-28	30+
	THOUSAND TREES												
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	1531607	703823	364826	167744	110648	65157	44014	27500	15488	7343	2952	2049	63
LONGLEAF PINE	92620	25964	17970	16431	13041	8763	6028	2813	1064	397	98	51	0
POND PINE	433546	169290	110669	70675	40305	24306	9768	5094	2126	721	308	84	0
SHORTLEAF PINE	510335	170937	134034	87319	60070	35251	14601	5660	1628	567	174	94	0
SLASH PINE	38284	17131	12617	6745	1663	98	0	0	10	0	0	0	0
VIRGINIA PINE	685666	343950	167909	89520	49471	23751	8090	2003	656	169	41	6	0
OTHER YELLOW PINES	53306	13425	12311	10202	7988	5001	2381	1113	577	166	105	39	0
TOTAL YELLOW PINES	3345366	1444520	820536	468136	283206	162327	84882	44783	21549	9363	3678	2323	63
OTHER SOFTWOODS:													
EASTERN WHITE PINE	112126	63979	19664	7477	8113	4441	2797	2101	1462	979	441	563	109
CYPRESS	38013	13121	6382	4407	3405	3507	2602	1750	1017	678	435	600	109
OTHER SOFTWOODS	305714	209672	56344	20441	8363	5316	2056	1601	711	303	421	351	133
TOTAL OTHER SOFTWOODS	455853	286772	82390	32325	19881	13264	7457	5452	3190	1960	1297	1514	351
SOFT HARDWOODS:													
SWEETGUM	1500676	1070149	247061	65120	44841	23468	13430	7407	4774	2299	1034	1024	69
YELLOW POPLAR	544793	277790	107680	53622	36498	25353	18415	11953	6320	3520	1673	1723	96
TUPELO AND BLACKGUM	1033095	705823	152162	64222	42046	25294	16639	11360	6702	3972	2089	2330	456
BAY AND MAGNOLIA	412445	354265	41906	8695	3898	1608	946	709	263	91	66	43	5
SOFT MAPLES	2155364	1607520	327182	108689	50641	27598	15267	8407	4433	2478	1280	1442	127
OTHER SPECIES	434885	303111	60255	31543	18719	9049	5631	3039	1768	768	428	526	48
TOTAL SOFT HARDWOODS	6086958	4318658	936446	351891	196543	112370	70328	42875	24260	13128	6570	7088	801
OAKS:													
BLACK	129498	58987	28216	16501	8971	6562	4403	2272	1606	842	461	595	82
CHESTNUT	214368	79346	53043	28135	18409	13078	7654	5621	3539	1860	1257	1807	219
LAUREL	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTHERN RED	127934	59030	26300	13775	8722	6260	4407	2958	2254	1388	1125	1440	275
SCARLET	151262	49271	34516	23688	15703	11463	7018	4535	2332	1487	641	593	13
SOUTHERN RED	207422	115038	46543	18083	11503	6063	4413	2504	1334	710	288	301	42
WATER	423247	293508	69898	29809	12941	7126	4235	2390	1306	857	420	627	130
WHITE	495331	258670	99931	53724	29091	21125	13653	7935	5111	2610	1418	1693	170
OTHER OAKS	304636	189460	49686	27450	14871	9816	5417	3154	2013	1050	548	982	189
SCRUB OAKS	306644	245554	39759	13435	5159	1937	648	99	45	8	0	0	0
TOTAL OAKS	2360342	1348884	447894	225200	125370	83430	52048	31668	19540	11012	6158	8038	1100
OTHER HARDWOODS:													
ASH	358501	250483	60560	21997	12037	5771	3342	1967	1144	684	243	253	20
HICKORY	411421	263942	66023	30669	18715	12232	7891	5596	2892	1939	762	719	41
OTHER HARD HARDWOODS	1947501	1469146	315101	86103	34120	18256	10795	6510	2913	2123	931	1377	126
TROPICALS AND MISC. SPP.	1589528	1187357	291264	77602	22875	6922	2217	862	270	90	55	13	1
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	4306951	3170928	732948	216371	87747	43181	24245	14935	7219	4836	1991	2362	188
ALL SPECIES	16549470	10569762	3020214	1293923	712747	414572	238960	139713	75758	40299	19694	21325	2503

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Table 18.—Merchantable cubic volume of all live trees on commercial forest land, North Carolina, by species and diameter class, 1974

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
						THOUSAND CUBIC FEET							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	5033802	0	0	474355	695737	789282	857121	787196	619577	392420	205771	200532	11811
LONGLEAF PINE	454970	0	0	41456	62909	97607	103772	68262	35289	17225	4459	3991	0
POND PINE	1029904	0	0	155794	209228	252099	165454	120733	70204	31753	17977	6665	0
SHORTLEAF PINE	1599356	0	0	233155	390187	424529	280119	158421	63467	30066	12370	7042	0
SLASH PINE	19821	0	0	12178	6814	621	0	0	248	0	0	0	0
VIRGINIA PINE	1128718	0	0	270613	334422	281011	145830	64314	22087	7511	2545	385	0
OTHER YELLOW PINES	216327	0	0	25775	43062	49633	38396	24535	19928	7134	5647	2217	0
TOTAL YELLOW PINES	9482698	0	0	1213286	1762359	1894782	1590692	1223461	830600	466106	248769	220832	11811
OTHER SOFTWOODS:													
EASTERN WHITE PINE	425907	0	0	24248	52589	52376	50176	53876	50725	43922	24307	55349	18337
CYPRESS	334222	0	0	14725	26826	45722	47533	44952	35923	32237	25500	47835	12969
OTHER SOFTWOODS	330649	0	0	50604	46993	56217	31961	37389	21656	12567	23670	28655	20537
TOTAL OTHER SOFTWOODS	1090778	0	0	89577	126408	154315	129672	136217	108504	88726	73477	132039	51843
SOFT HARDWOODS:													
SWEETGUM	1673046	0	0	198508	271126	275491	260511	207431	162179	116336	64006	86216	11242
YELLOW POPLAR	2064016	0	0	162378	234755	297680	362015	334313	239635	168468	104615	149076	10663
TUPELO AND BLACKGUM	1956095	0	0	170622	252692	279693	265912	278914	216995	169286	102769	152559	46433
BAY AND MAGNOLIA	101654	0	0	18608	19184	15616	13374	16264	8907	3548	2748	2693	710
SOFT MAPLES	1639167	0	0	278223	282421	279765	237553	184444	125668	90720	60505	88931	10740
OTHER SPECIES	643977	0	0	81542	110336	102240	99782	77419	62664	37165	23805	41177	7847
TOTAL SOFT HARDWOODS	8077957	0	0	909881	1170714	1250687	1259144	1098785	836448	585523	358468	520652	87655
OAKS:													
BLACK	453312	0	0	42435	49962	67139	68599	55840	53396	34318	24060	45565	11998
CHESTNUT	970375	0	0	69955	102017	137437	127616	141150	112088	71743	60006	121726	26437
LAUREL	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTHERN RED	683558	0	0	40758	54650	71542	74185	72633	77360	65645	64239	120817	41729
SCARLET	760480	0	0	68400	96898	125740	120530	113220	81677	69906	36503	45048	2358
SOUTHERN RED	405259	0	0	40616	60838	59404	71484	57117	43626	30164	14767	21742	5499
WATER	524122	0	0	77143	74778	73121	67215	56044	42104	37978	23649	50691	21399
WHITE	1553014	0	0	143195	171667	234646	243692	207038	161433	126249	83877	134534	26683
OTHER OAKS	662645	0	0	68298	82215	96291	88714	75158	63480	45797	29333	79995	33564
SCRUB OAKS	60621	0	0	21382	18634	11836	6414	1394	956	205	0	0	0
TOTAL OAKS	6073786	0	0	572184	711659	877156	868049	779594	656320	482005	336434	620118	169667
OTHER HARDWOODS:													
ASH	405229	0	0	55461	70253	62028	59140	51383	41581	31870	12797	17612	2904
HICKORY	912063	0	0	76141	108976	128190	139127	146407	107209	90212	45661	61112	7028
OTHER HARD HARDWOODS	1252370	0	0	198810	182463	184663	175641	154373	93664	89990	46788	105787	17991
TROPICALS AND MISC. SPP.	352667	0	0	158140	95077	50307	24180	13267	6103	2670	2113	634	176
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	2922329	0	0	490552	456769	425188	398088	365430	248757	214742	109359	185345	28099
ALL SPECIES	27647748	0	0	3275480	4227909	4602128	4246245	3603487	2660629	1857102	1126507	1678986	349075

Table 19.–Total cubic volume of all live trees on commercial forest land, North Carolina, by species and diameter class, 1974

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
						THOUSAND CUBIC FEET							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	6460242	120540	414163	674695	848616	920273	981109	892647	698693	441070	230790	224427	13219
LONGLEAF PINE	570906	7758	30513	57466	99641	112764	117813	76789	39522	19241	4981	4418	0
POND PINE	1242374	28228	102273	144096	195811	297265	191305	138701	60388	36226	20497	7584	0
SHORTLEAF PINE	2074339	30025	132704	318341	470788	494031	320857	180056	71777	33917	13922	7921	0
SLASH PINE	53186	6179	20367	17358	8278	726	0	0	276	0	0	0	0
VIRGINIA PINE	1761342	97513	295981	357327	401896	328874	168591	73943	25302	8579	2901	435	0
OTHER YELLOW PINES	280738	4864	20855	33495	51233	57717	44306	28180	22626	8168	6573	2521	0
TOTAL YELLOW PINES	12443127	295107	1016856	1602778	2076263	2211650	1823981	1390316	938786	547201	279664	247306	13219
OTHER SOFTWOODS:													
EASTERN WHITE PINE	524474	7706	16251	31488	63641	61760	58582	62523	58747	50746	28048	63833	21149
CYPRESS	431653	2677	7273	22154	35292	57854	59255	55365	44155	39369	31184	58769	18306
OTHER SOFTWOODS	492254	34322	54609	72026	58948	68060	37866	43461	25288	14478	27124	32791	23261
TOTAL OTHER SOFTWOODS	1448381	44705	78133	125668	157881	187674	155703	161369	128190	104593	86356	155393	62716
SOFT HARDWOODS:													
SWEETGUM	2458941	182678	246737	293817	338552	326943	303268	239002	209137	133009	73228	99430	13140
YELLOW POPLAR	2606944	68017	148551	216138	279793	344032	412792	378502	270544	169991	117726	167947	12911
TUPELO AND BLACKGUM	2810426	153355	188643	253800	327891	347766	355978	342578	265942	205830	125210	166227	57206
BAY AND MAGNOLIA	237459	56379	48380	26831	25525	19610	17482	19639	10419	4145	3143	3045	861
SOFT MAPLES	2988174	383034	516473	409086	364170	346133	293714	224315	151925	108744	72097	105618	12865
OTHER SPECIES	932456	63377	78744	116441	137885	122415	120629	91370	73386	43314	27862	47926	9107
TOTAL SOFT HARDWOODS	12034400	908840	1227528	1316113	1473816	1506899	1503863	1295406	981353	685033	419266	610193	106090
OAKS:													
BLACK	629355	12936	35028	64668	66054	85352	86096	69220	65943	42638	29774	56597	14849
CHESTNUT	1314103	18032	68451	100068	132298	172404	159482	174645	138364	89460	74291	152900	33708
LAUREL	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTHERN RED	908297	15293	29090	56520	70449	89906	92633	90855	96274	61682	79576	151243	54776
SCARLET	1017260	14483	37918	96890	124977	157941	150133	140901	101260	86502	45465	57766	3024
SOUTHERN RED	610909	28345	53383	66915	62590	76316	89316	70694	53604	36900	18176	27443	7037
WATER	854951	67079	89419	122953	102301	95936	87976	71611	53052	47237	29233	62231	25923
WHITE	2158930	55693	116127	212255	225483	298044	305494	257260	224929	156991	103831	168672	33951
OTHER OAKS	954533	34353	52371	108810	110583	123744	112366	94446	60068	57298	36872	100440	43180
SCRUB OAKS	171701	36493	43471	33568	25298	15353	12584	2704	1844	386	0	0	0
TOTAL OAKS	8620039	282707	525258	862847	940023	1114996	1096082	972336	815536	599094	417218	777492	216448
OTHER HARDWOODS:													
ASH	610342	52996	58287	83677	88098	73599	69723	60024	47902	36720	14940	20812	3564
HICKORY	1306078	53276	89642	123667	144419	161373	170615	179049	131097	111092	56226	76115	9507
OTHER HARD HARDWOODS	2271760	330204	390463	234985	223831	225848	223176	193981	117521	112216	61471	132673	25211
TROPICALS AND MISC. SPP.	1092548	245503	360195	226134	128525	66948	32180	17655	8021	3512	2783	863	229
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	5280728	681979	898587	668463	584873	527768	495694	450709	304541	263540	135420	230663	38511
ALL SPECIES	39826695	2213338	3746362	4575869	5232856	5548987	5075323	4270136	3168408	2199461	1337924	2021047	436984

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Table 20.–Merchantable green weight of all live trees on commercial forest land, North Carolina, by species and diameter class, 1974

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
						HUNDRED THOUSAND POUNDS							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	3704557	0	0	357394	516170	584364	629457	575654	451914	285739	149674	145690	8571
LONGLEAF PINE	352158	0	0	29911	63927	74932	81076	53023	28006	13725	3560	3198	0
POND PINE	702295	0	0	97631	131053	178171	118022	86451	50405	22820	12942	4800	0
SHORTLEAF PINE	1124174	0	0	151314	270572	306242	201413	113699	45500	21535	8858	5041	0
SLASH PINE	14052	0	0	8791	5212	458	0	0	191	0	0	0	0
VIRGINIA PINE	665426	0	0	225631	250816	208948	108247	47090	16367	5564	1884	279	0
OTHER YELLOW PINES	144571	0	0	16505	30064	32337	25411	16437	13546	4891	3862	1496	0
TOTAL YELLOW PINES	6907633	0	0	887177	1267744	1385452	1163626	893754	605929	354274	180800	160506	8571
OTHER SOFTWOODS:													
EASTERN WHITE PINE	282649	0	0	16630	35120	34903	33992	36459	34046	29211	15967	35107	11214
CYPRESS	243159	0	0	7365	15299	30605	33616	33259	27473	25193	20336	39005	11006
OTHER SOFTWOODS	255087	0	0	41539	34976	41869	24701	29668	17333	9992	18463	21857	14689
TOTAL OTHER SOFTWOODS	780895	0	0	65534	85395	107377	92311	99386	78852	64396	54766	95969	36909
SOFT HARDWOODS:													
SWEETGUM	1240656	0	0	149682	196623	201331	191467	153457	136016	87700	48681	66686	9013
YELLOW POPLAR	1466742	0	0	110514	160725	206427	256942	239853	173666	122681	76928	110733	8073
TUPELO AND BLACKGUM	1301149	0	0	99682	152000	175636	184919	168611	151276	120942	75118	115404	37561
BAY AND MAGNOLIA	63641	0	0	10162	11161	9391	8181	10929	6430	2608	2099	2087	593
SOFT MAPLES	1233310	0	0	206259	213976	213718	173506	138328	95622	69382	46402	68031	8086
OTHER SPECIES	429544	0	0	51776	70361	67208	63786	51702	43134	26357	17333	31571	6314
TOTAL SOFT HARDWOODS	5735044	0	0	628077	804646	873711	878801	782680	606144	429870	266561	394514	69640
OAKS:													
BLACK	405999	0	0	40360	45897	60992	62116	49441	46783	29909	20869	39321	10311
CHESTNUT	768989	0	0	53578	77966	106913	98433	111272	69696	58132	49048	101332	22617
LAUREL	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTHERN RED	564376	0	0	31537	44400	59709	60848	59931	64063	54555	53489	100967	34877
SCARLET	666954	0	0	59924	65339	111442	107771	99232	71016	60257	31364	38592	2015
SOUTHERN RED	331474	0	0	27037	43676	45412	61742	49394	38242	26627	13750	20348	5444
WATER	430260	0	0	61354	60735	59634	54812	46599	35305	31946	19888	42486	17499
WHITE	1265215	0	0	109410	135266	190368	204137	173912	153197	107248	71755	116343	23577
OTHER OAKS	563494	0	0	49761	65404	80740	74669	64470	55394	40581	26527	73513	32435
SCRUB OAKS	66334	0	0	25110	20063	12387	6360	1340	886	188	0	0	0
TOTAL OAKS	5083095	0	0	458071	578750	727597	730888	655591	554586	409643	286290	532904	148775
OTHER HARDWOODS:													
ASH	260049	0	0	40756	46247	40428	37101	31369	24661	18625	7321	9908	1433
HICKORY	746456	0	0	57915	84943	104536	113922	120461	89345	76055	39062	53618	6599
OTHER HARD HARDWOODS	1062163	0	0	148483	148080	159040	154280	134921	82469	79533	43206	95841	16310
TROPICALS AND MISC. SPP.	258653	0	0	123911	66629	33060	17997	9378	4116	1751	1336	382	91
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	2327321	0	0	371065	347899	337064	323300	296129	200793	175964	90925	159749	24433
ALL SPECIES	20834188	0	0	2409924	3084634	3431201	3188926	2727740	2046304	1434147	879342	1343642	288328

Table 21.–Total green weight of all live trees on commercial forest land, North Carolina, by species and diameter class, 1974

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
						HUNDRED THOUSAND POUNDS							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	4715568	86330	265209	508694	629450	661375	720473	652739	509634	321166	167852	163053	9593
LONGLEAF PINE	438887	5671	21639	41338	76823	86574	92060	60558	31373	15335	3975	3541	0
POND PINE	969346	20277	66459	161750	191099	210013	136471	99307	57708	26038	14761	5463	0
SHORTLEAF PINE	1459953	23918	95880	206040	326380	356401	230700	129237	51465	24295	9967	5670	0
SLASH PINE	38594	4513	14460	12543	6326	538	0	0	214	0	0	0	0
VIRGINIA PINE	1333347	71262	209822	298745	301473	244515	125134	54827	18749	6356	2149	315	0
OTHER YELLOW PINES	188679	3546	14797	21439	35770	37592	29321	18879	15516	5601	4515	1703	0
TOTAL YELLOW PINES	9164374	215517	688266	1250549	1567321	1617008	1334159	1015547	684659	398791	203219	179745	9593
OTHER SOFTWOODS:													
EASTERN WHITE PINE	348540	5640	10638	21599	42509	41146	39681	42310	39428	33740	18427	40489	12933
CYPRESS	313282	2045	5384	11056	20136	38693	41885	40973	33783	30763	24873	47923	15768
OTHER SOFTWOODS	378576	26273	40598	59199	43891	50636	29254	34494	20065	11518	21166	24842	16640
TOTAL OTHER SOFTWOODS	1040398	33958	56620	91854	106536	130475	110820	117777	93276	76021	64466	113254	45341
SOFT HARDWOODS:													
SWEETGUM	1860069	150655	203608	222160	245459	238922	222878	176815	156126	100279	55695	76931	10541
YELLOW POPLAR	1848185	49027	102020	147089	191521	238415	292989	271562	195898	138591	86571	124734	9768
TUPELO AND BLACKGUM	1909932	123138	150685	148187	196916	218295	230036	231602	185362	147033	91505	140886	46267
BAY AND MAGNOLIA	157124	42535	33404	14652	14836	11795	10664	13186	7522	3046	2402	2363	719
SOFT MAPLES	2226174	286671	369078	303178	275801	264397	214520	168202	115420	83159	55275	80794	9679
OTHER SPECIES	632504	48275	58242	74050	87915	80474	76993	61018	50485	30722	20281	36719	7330
TOTAL SOFT HARDWOODS	8633988	700301	917037	909316	1012448	1052298	1048080	922385	710813	502830	311729	462427	84324
OAKS:													
BLACK	565829	12588	31572	61811	60695	77536	77962	61295	57782	37156	25826	48842	12764
CHESTNUT	1048405	16386	59710	76660	101087	134123	122835	137689	110723	72470	60710	127211	28801
LAUREL	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTHERN RED	754007	14770	26362	43708	57240	75033	75981	74977	79735	67878	66256	126356	45711
SCARLET	894537	13940	34419	64892	110070	139965	134245	123483	87829	74568	39061	49482	2583
SOUTHERN RED	505065	27402	48325	44406	59252	58333	77148	61143	47163	32817	16433	25678	6965
WATER	717940	65078	80436	97702	83087	78255	71656	59540	44498	39734	24583	52153	21218
WHITE	1786113	46344	96141	162073	177643	241801	255920	216087	189933	133353	88828	146013	29977
OTHER OAKS	811909	31895	45329	79297	87955	103769	94576	81009	69857	50772	33340	92300	41810
SCRUB OAKS	183718	40577	43150	39537	27250	16068	12472	2600	1710	354	0	0	0
TOTAL OAKS	7267523	270980	465444	690086	764279	924883	922795	817823	689230	509102	355037	668035	189829
OTHER HARDWOODS:													
ASH	413178	43259	47512	61608	60514	47972	43725	36634	28637	21458	8537	11563	1759
HICKORY	1076973	49285	78327	91581	112518	131563	139704	147315	109244	93646	48093	66781	8916
OTHER HARD HARDWOODS	1924955	279422	328803	175173	181851	194574	195638	169471	103298	99224	54432	120359	22710
TROPICALS AND MISC. SPP.	851822	205440	288378	177367	90088	43999	23951	12484	5415	2302	1761	519	118
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	4266928	577406	743020	505729	444971	418108	403018	365904	246594	216630	112823	199222	33503
ALL SPECIES	30373211	1798162	2870387	3447534	3895555	4142772	3818872	3239436	2424572	1703374	1047274	1622683	362590

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Table 22.–Number of all live trees on commercial forest land, South Carolina, by species and diameter class, 1978

SPECIES	ALL CLASSES	DIAMETER CLASS											
		2	4	6	8	10	12	14	16	18	20	22-28	30+
						THOUSAND TREES							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	1419136	578973	327824	203105	128566	77220	46989	27340	15247	7644	3378	2750	100
LONGLEAF PINE	128954	42135	26689	18235	14586	11409	8041	4823	2111	692	162	66	5
POND PINE	103058	25109	28221	19008	12565	7689	4985	2681	1375	589	279	157	0
SHORTLEAF PINE	535107	252283	133343	70031	43244	21510	9440	3340	1331	462	69	52	2
SLASH PINE	193131	40307	59327	49219	27443	10512	4118	1177	681	251	55	41	0
VIRGINIA PINE	120536	53632	28815	17198	10947	6061	2442	1048	234	131	15	13	0
OTHER YELLOW PINES	5817	1418	1006	1000	746	572	491	220	157	91	70	46	0
TOTAL YELLOW PINES	2505739	993857	605225	377796	238097	135173	76506	40829	21136	9860	4028	3125	107
OTHER SOFTWOODS:													
EASTERN WHITE PINE	6344	3923	1708	0	198	87	96	83	75	51	24	91	8
CYPRESS	68456	28150	11321	8054	5660	4972	3092	2697	1871	994	706	795	144
OTHER SOFTWOODS	236617	175337	44497	10845	3712	1525	446	89	55	41	27	43	0
TOTAL OTHER SOFTWOODS	311417	207410	57526	18899	9570	6584	3634	2869	2001	1086	757	929	152
SOFT HARDWOODS:													
SWEETGUM	1226273	816166	225189	67690	42414	23061	14324	7685	4453	2534	1207	1240	110
YELLOW POPLAR	122951	69179	15265	12237	7484	6030	4371	3199	2081	1389	856	805	55
TUPELO AND BLACKGUM	730767	474223	108563	48713	32288	21966	17540	11802	6844	3891	2022	2529	386
BAY AND MAGNOLIA	200467	180174	14826	3475	1150	360	217	120	61	12	18	25	9
SOFT MAPLES	815196	618957	115132	38882	18002	10234	5785	3514	2186	1384	700	635	85
OTHER SPECIES	348682	243595	54857	23736	11433	6011	4249	1952	1071	687	420	542	129
TOTAL SOFT HARDWOODS	3444336	2402294	533632	214733	112771	67662	46486	28472	16716	9597	5223	5776	774
OAKS:													
BLACK	44140	18967	14384	4138	2601	1680	981	504	270	172	128	103	12
CHESTNUT	16136	7721	1680	2370	1361	1131	753	411	224	160	24	95	6
LAUREL	161222	95773	30621	12156	7395	4483	3159	2365	1744	1099	763	1341	303
NORTHERN RED	32528	15939	7126	3413	1738	1630	1260	679	386	237	63	55	0
SCARLET	36854	11961	9679	5899	3812	2303	1541	791	439	236	87	100	6
SOUTHERN RED	149809	78074	35117	17201	9083	4160	2913	1437	977	358	183	262	44
WATER	465182	313852	80684	34145	17158	9259	4434	2293	1384	806	458	430	79
WHITE	179329	87465	41239	20964	12066	7707	4188	2596	1596	710	391	351	54
OTHER OAKS	309917	184024	57821	27997	15210	8756	5966	3667	2346	1431	876	1327	296
SCRUB OAKS	438209	349661	64808	16603	5253	1390	339	116	15	5	0	19	0
TOTAL OAKS	1833326	1163437	343559	144886	75877	42499	25534	15059	9385	5214	2993	4083	800
OTHER HARDWOODS:													
ASH	287671	209919	44612	14143	7145	5181	2756	1931	823	583	272	267	39
HICKORY	259151	177457	38249	19731	10419	5117	3218	2216	1171	661	365	469	78
OTHER HARD HARDWOODS	662094	527763	95991	24513	6952	2916	1872	807	537	275	190	264	14
TROPICALS AND MISC. SPP.	462473	366802	83829	21364	6483	2818	686	263	125	62	19	19	3
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	1691389	1281941	262681	79751	30999	16032	8532	5217	2656	1581	846	1019	134
ALL SPECIES	9786207	6048939	1802623	836065	467314	267950	160692	92446	51894	27338	13847	14932	1967

Table 23.–Merchantable cubic volume of all live trees on commercial forest land, South Carolina, by species and diameter class, 1978

SPECIES	ALL CLASSES	DIAMETER CLASS											
		2	4	6	8	10	12	14	16	18	20	22-28	30+
	THOUSAND CUBIC FEET												
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	5442108	0	0	508673	801060	904416	901960	779949	610661	405343	234279	276384	19383
LONGLEAF PINE	699227	0	0	53195	95633	138532	154386	132722	76651	32785	8992	5708	627
POND PINE	479421	0	0	45739	77076	88522	89016	74231	48363	27342	16666	12466	0
SHORTLEAF PINE	1041055	0	0	175521	267248	245781	174401	93955	51963	23024	4199	4585	378
SLASH PINE	583840	0	0	128845	174013	120751	78044	34382	27535	12494	3738	4035	0
VIRGINIA PINE	272243	0	0	50849	72019	67909	41695	25278	7445	5156	884	1008	0
OTHER YELLOW PINES	47437	0	0	2591	5273	6776	9411	5205	5333	4211	4471	4166	0
TOTAL YELLOW PINES	8565331	0	0	965413	1492322	1572687	1448913	1145722	827951	510355	273229	308355	20384
OTHER SOFTWOODS:													
EASTERN WHITE PINE	23448	0	0	0	1082	1098	1686	2173	2693	2344	1551	9828	993
CYPRESS	511987	0	0	25734	38179	63788	59294	74048	67932	46759	42132	70251	23870
OTHER SOFTWOODS	72552	0	0	23837	17633	14021	6301	2109	1726	1439	1508	3976	0
TOTAL OTHER SOFTWOODS	607987	0	0	49571	56894	78907	67281	78330	72353	50542	45191	84055	24863
SOFT HARDWOODS:													
SWEETGUM	1814882	0	0	205167	261363	282071	286572	227033	184097	136212	85066	125686	21615
YELLOW POPLAR	622006	0	0	35982	50434	73907	85008	89277	80413	70711	55046	70282	10946
TUPELO AND BLACKGUM	1899624	0	0	137713	198791	249376	309906	292674	228431	162481	104526	173303	42427
BAY AND MAGNOLIA	32739	0	0	9421	6406	3616	3496	2381	2540	474	717	1600	2068
SOFT MAPLES	736562	0	0	118585	111891	112177	96737	85423	70462	45040	37163	48381	10703
OTHER SPECIES	514969	0	0	61336	68716	66639	77404	53285	42089	35427	27951	54267	27855
TOTAL SOFT HARDWOODS	5620782	0	0	568204	697601	787786	859123	750073	608032	450345	310469	473519	115630
OAKS:													
BLACK	103600	0	0	11301	15773	15663	15307	12308	8514	7298	7107	8657	1672
CHESTNUT	70044	0	0	5873	8181	11932	12034	9387	7316	6674	824	6546	1277
LAUREL	597650	0	0	37633	48374	54921	58913	64219	62948	52386	47146	118055	53055
NORTHERN RED	118953	0	0	11139	11780	20022	22008	19251	13551	12027	3918	5257	0
SCARLET	162514	0	0	17827	25327	27011	28988	20586	16373	11784	5318	8090	1210
SOUTHERN RED	301474	0	0	42724	50765	42889	49105	33175	30979	14202	10422	19812	7401
WATER	592248	0	0	102788	102798	98764	75369	55106	46416	34920	27591	35204	13290
WHITE	532603	0	0	59221	77055	88876	78235	70026	58236	36218	23898	31650	8968
OTHER OAKS	820811	0	0	74965	87440	91030	100512	97121	82147	64655	50200	117471	55270
SCRUB OAKS	77889	0	0	37101	22345	11043	4359	2144	243	190	0	464	0
TOTAL OAKS	3377786	0	0	400572	449838	462151	444830	383323	326725	240354	176424	351406	142163
OTHER HARDWOODS:													
ASH	367931	0	0	41778	45430	62955	54661	52949	31237	29217	17130	26320	6254
HICKORY	445253	0	0	49736	59118	53791	57935	58383	45735	33878	23773	45750	17154
OTHER HARD HARDWOODS	241876	0	0	53671	36787	31341	31488	21096	18151	12688	11360	23608	1466
TROPICALS AND MISC. SPP.	124224	0	0	50533	28773	22917	8945	5039	3433	1793	1436	1066	289
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	1179284	0	0	195718	170108	171004	153029	137467	98556	77776	53699	96744	25183
ALL SPECIES	19351170	0	0	2179478	2866763	3072535	2973176	2494915	1933617	1329372	859012	1314079	326223

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Table 24.–Total cubic volume of all live trees on commercial forest land, South Carolina, by species and diameter class, 1978

SPECIES	ALL CLASSES	DIAMETER CLASS											
		2	4	6	8	10	12	14	16	18	20	22-28	30+
	THOUSAND CUBIC FEET												
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	6825438	91345	326991	721478	976346	1055086	1032300	884296	668551	455563	262678	309154	21618
LONGLEAF PINE	858321	11657	34322	73203	115197	160064	175200	149272	85783	36567	10004	6341	711
POND PINE	600019	5298	29230	61362	92846	103536	102840	85202	55313	31216	16988	14186	0
SHORTLEAF PINE	1409333	38555	119007	241655	322647	285867	199753	106769	58766	26001	4734	5153	424
SLASH PINE	814065	13240	86358	161136	210453	139955	88757	38722	30646	13946	4162	4490	0
VIRGINIA PINE	364039	13569	43969	67585	86449	79316	48134	29033	8516	5669	1008	1149	0
OTHER YELLOW PINES	57106	568	1516	3614	6335	7695	10788	5917	4024	4754	5014	4661	0
TOTAL YELLOW PINES	10948921	174272	643393	1350033	1810273	1831719	1657772	1299213	933603	573936	306568	345166	22753
OTHER SOFTWOODS:													
EASTERN WHITE PINE	29503	735	1557	0	1305	1290	1969	2522	3117	2708	1790	11367	1143
CYPRESS	684231	5959	13366	39570	51083	81401	74051	91494	63324	56990	51332	85536	30123
OTHER SOFTWOODS	168348	29357	42672	35966	22754	17204	7556	2471	2036	1716	1804	4616	0
TOTAL OTHER SOFTWOODS	882082	36051	57795	75536	75142	99695	83576	96487	68477	61416	54926	101515	31266
SOFT HARDWOODS:													
SWEETGUM	2544034	134786	223225	304406	325436	333977	332423	260654	210031	155012	96503	142709	24670
YELLOW POPLAR	750658	15904	19343	46385	60044	85285	96796	101093	90691	79546	61973	79528	12370
TUPELO AND BLACKGUM	2644713	105654	126095	204926	258512	313559	304786	301800	262439	201388	129852	219216	56686
BAY AND MAGNOLIA	90565	30882	16793	19410	8113	4390	4191	2657	2996	557	900	1905	2581
SOFT MAPLES	1238608	142602	176107	169164	140023	136924	116024	102451	84313	54025	44504	56190	13081
OTHER SPECIES	741110	46185	68905	68663	65605	79674	91351	62409	49107	41228	32470	62662	32451
TOTAL SOFT HARDWOODS	8009888	476013	630468	829956	878333	954009	1026161	891464	719377	531756	366102	564410	141839
OAKS:													
BLACK	155557	4266	16050	16960	20767	19922	19107	15269	10579	9028	6766	10657	2186
CHESTNUT	91428	1568	1623	8335	10452	14867	14672	11550	9001	8249	1039	8179	1693
LAUREL	827612	19973	34146	58460	65220	71205	75296	81244	79601	65840	59379	149417	67831
NORTHERN RED	161707	3330	8662	15195	15064	25136	27469	23654	16757	14676	4884	6476	0
SCARLET	220511	2861	12163	25076	32579	33787	35947	25409	20134	14456	6580	9986	1513
SOUTHERN RED	451275	15268	37829	70840	68791	54797	61262	40978	37083	17459	12704	24191	9173
WATER	945302	63035	91514	162631	138568	127361	95480	69305	58231	43673	34434	44159	16711
WHITE	749519	20560	46462	87742	100734	112506	97696	86892	71929	44651	29837	39337	11364
OTHER OAKS	1156933	36854	61437	117693	117172	116803	126481	121134	102033	80213	62143	145312	69658
SCRUB OAKS	232689	56205	63840	58225	30518	14376	5574	2729	326	238	0	656	0
TOTAL OAKS	4992533	223940	375726	621357	599870	590764	559186	478364	406574	298685	219566	438372	180129
OTHER HARDWOODS:													
ASH	523326	38862	44821	59343	55846	74221	63308	60980	35639	33356	19527	29969	7234
HICKORY	648267	35961	44094	78264	78220	67655	71294	71231	55496	41031	26737	55544	20790
OTHER HARD HARDWOODS	537330	113904	106325	81343	48166	39320	39009	26055	22366	15666	14002	29075	2095
TROPICALS AND MISC. SPP.	338976	72560	90170	78093	39146	30283	11676	6580	4505	2405	1817	1373	364
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	2047899	261307	285410	297043	221382	211479	185289	164846	118158	92458	64083	115961	30483
ALL SPECIES	26861323	1171583	1992792	3173925	3585000	3687866	3511984	2930374	2266389	1558251	1101265	1565424	406470

Table 25.—Merchantable green weight of all live trees on commercial forest land, South Carolina, by species and diameter class, 1978

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
	HUNDRED THOUSAND POUNDS												
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	4007192	0	0	383676	594402	670303	662603	570393	445399	295156	170410	200787	14061
LONGLEAF PINE	545113	0	0	39063	73858	106819	121061	104975	60919	26152	7165	4580	501
POND PINE	343409	0	0	33570	55017	62759	63544	53171	34720	19657	11992	8979	0
SHORTLEAF PINE	727865	0	0	112640	184517	177491	125469	67436	37257	16499	3006	3280	270
SLASH PINE	447554	0	0	96956	135525	91657	59862	26526	21306	9678	2900	3142	0
VIRGINIA PINE	208550	0	0	43245	54342	50520	30958	18745	5519	3820	654	747	0
OTHER YELLOW PINES	33754	0	0	1825	3806	4713	6599	3719	3620	3012	3238	3022	0
TOTAL YELLOW PINES	6313437	0	0	710979	1101467	1164262	1070096	844965	608940	373974	199385	224537	14832
OTHER SOFTWOODS:													
EASTERN WHITE PINE	15236	0	0	0	732	733	1143	1469	1802	1556	1011	6172	620
CYPRESS	374697	0	0	12799	21590	41959	42131	55180	52088	36611	33654	57732	20953
OTHER SOFTWOODS	55608	0	0	19091	13452	10230	4701	1651	1298	1105	1121	2959	0
TOTAL OTHER SOFTWOODS	445543	0	0	31890	35774	52922	47975	58300	55188	39272	35786	66863	21573
SOFT HARDWOODS:													
SWEETGUM	1350504	0	0	154627	190260	206301	210786	168091	137645	102631	64874	97617	17472
YELLOW POPLAR	445644	0	0	24516	34586	51235	60272	64052	58233	51644	40483	52272	8351
TUPELO AND BLACKGUM	1296646	0	0	75689	119445	158094	200004	199877	163360	120632	79700	141556	38089
BAY AND MAGNOLIA	20742	0	0	5140	3850	2288	2132	1548	1807	354	552	1267	1804
SOFT MAPLES	555001	0	0	87506	85087	85832	70668	64107	53544	34465	28521	37115	8156
OTHER SPECIES	353135	0	0	39307	44057	43731	49078	36121	29468	25683	20938	42154	22598
TOTAL SOFT HARDWOODS	4021672	0	0	386985	477285	547481	592940	533796	444057	335609	235068	371981	96470
OAKS:													
BLACK	93208	0	0	10773	14518	14242	13909	10904	7465	6352	6153	7456	1436
CHESTNUT	55251	0	0	4528	6275	9259	9215	7368	5865	5433	668	5499	1141
LAUREL	485802	0	0	29030	39273	45301	47725	52552	51670	43002	38630	96139	42480
NORTHERN RED	97639	0	0	8474	9591	16764	18018	15895	11219	10007	3269	4402	0
SCARLET	142621	0	0	15615	22343	23947	25802	18041	14187	10150	4567	6932	1037
SOUTHERN RED	244674	0	0	28782	36692	32939	42409	28707	27095	12601	9466	18463	7520
WATER	484870	0	0	81527	83574	80464	61655	45752	38860	29316	23190	29511	11021
WHITE	438958	0	0	45232	60985	72215	65553	58838	49179	30831	20462	27627	8036
OTHER OAKS	706984	0	0	55258	69468	75642	85089	84086	72416	57888	45498	109706	52931
SCRUB OAKS	85325	0	0	42651	24183	11388	4266	2031	228	171	0	407	0
TOTAL OAKS	2835332	0	0	321870	366902	382161	373641	324176	278184	205751	151903	305142	125602
OTHER HARDWOODS:													
ASH	232629	0	0	30557	31189	40827	34407	32475	18673	17059	9806	14398	3238
HICKORY	365743	0	0	36546	46023	43878	47347	48046	38169	28665	20411	40519	16139
OTHER HARD HARDWOODS	199001	0	0	40107	29086	25689	25831	17861	15710	11446	10045	21767	1459
TROPICALS AND MISC. SPP.	86178	0	0	38560	20421	15046	5276	2809	1806	930	680	516	134
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	883551	0	0	145770	126719	125440	112861	101191	74358	58100	40942	77200	20970
ALL SPECIES	14499535	0	0	1597494	2108147	2272266	2197513	1862428	1460727	1012706	663084	1045723	279447

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Table 26.–Total green weight of all live trees on commercial forest land, South Carolina, by species and diameter class, 1978

SPECIES	ALL CLASSES	DIAMETER CLASS											
		2	4	6	8	10	12	14	16	18	20	22-28	30+
	HUNDRED THOUSAND POUNDS												
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	4998283	65732	211024	544638	724492	762006	758357	646686	502237	331721	191060	224620	15666
LONGLEAF PINE	665415	8537	24457	53611	68953	123412	137366	119069	68181	29171	7996	5086	572
POND PINE	427852	3754	18638	45091	66272	73404	73415	61040	39706	22447	13663	10220	0
SHORTLEAF PINE	989502	30933	86372	154611	222714	206421	143671	76633	42136	18627	3391	2686	303
SLASH PINE	618034	9665	62821	136095	163693	106256	68056	29865	23665	10805	3230	3491	0
VIRGINIA PINE	292705	9954	31251	57715	65244	59000	35734	21531	6315	4364	747	656	0
OTHER YELLOW PINES	40628	428	1076	2547	4574	5492	7557	4226	4316	3398	3633	3379	0
TOTAL YELLOW PINES	8032419	129003	435841	994298	1336142	1355991	1224160	958052	686760	420533	223740	251336	16963
OTHER SOFTWOODS:													
EASTERN WHITE PINE	19227	528	1014	0	883	861	1336	1705	2085	1798	1166	7139	712
CYPRESS	463521	4546	9897	19670	28897	53451	52594	68182	63906	44630	41015	70316	26417
OTHER SOFTWOODS	128273	22946	31670	28859	17363	12553	5633	1934	1527	1318	1342	3428	0
TOTAL OTHER SOFTWOODS	631021	27520	42781	48529	47143	66865	59563	71821	67516	47746	43523	80883	27129
SOFT HARDWOODS:													
SWEETGUM	1922407	111107	184200	229857	236931	244259	244506	193114	157034	117017	73601	110639	19942
YELLOW POPLAR	537092	11466	13317	32963	41180	59131	68619	72529	65681	58102	45512	59151	9441
TUPELO AND BLACKGUM	1829323	84802	100742	112508	155263	198804	248256	247206	202056	149754	99229	179596	51103
BAY AND MAGNOLIA	60962	22498	11607	7819	4876	2778	2546	1857	2130	417	693	1506	2229
SOFT MAPLES	925228	106698	125924	124690	106941	104767	85167	76879	64067	41343	34151	44639	9962
OTHER SPECIES	514319	35235	50979	56900	54887	52402	57916	42294	34372	29883	24323	48810	26318
TOTAL SOFT HARDWOODS	5789331	371806	466769	564737	600080	662141	707012	633681	525340	396516	277509	444545	118995
OAKS:													
BLACK	140482	4144	16245	16191	19116	18119	17361	13521	9279	7656	7591	9179	1878
CHESTNUT	72452	1428	1432	6428	8016	11540	11387	9064	7214	6714	842	6672	1515
LAUREL	678574	19423	30913	44996	52924	58731	61003	66491	65339	54053	48664	121702	54335
NORTHERN RED	133837	3244	7803	11539	12268	21052	22484	19093	13675	12379	4076	5424	0
SCARLET	194048	2764	10938	21965	28731	29956	32005	22268	17448	12450	5651	8555	1295
SOUTHERN RED	369026	14916	34297	47595	49696	42075	52904	35455	33214	15491	11538	22532	9719
WATER	790403	61406	82762	128948	112656	103754	78103	57545	48745	36662	26931	37026	13865
WHITE	617645	17789	38484	66968	79711	91417	81856	73007	60744	38011	25361	34113	10162
OTHER OAKS	994844	33575	53091	86738	93104	97073	107064	104873	89947	71832	56329	134481	66737
SCRUB OAKS	249798	61982	63762	67037	33043	14633	5456	2584	306	215	0	581	0
TOTAL OAKS	4241109	220691	339727	498405	489261	488552	469625	444501	346110	255663	189003	380465	159106
OTHER HARDWOODS:													
ASH	347750	31753	36532	43486	38350	48154	39658	37398	21421	19478	11180	16393	3747
HICKORY	536686	33228	38733	57406	60854	55171	58261	58605	46272	34720	24683	49197	19556
OTHER HARD HARDWOODS	445743	96560	89497	60794	38110	32222	31992	22055	19354	13913	12377	26801	2068
TROPICALS AND MISC. SPP.	256494	60794	72457	59689	27606	19676	6898	3668	2372	1247	861	665	169
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	1586673	222335	237219	221375	165122	155423	136999	121726	89419	69358	49101	93056	25540
ALL SPECIES	20280553	971355	1542337	2327344	2637748	2728972	2597359	2189981	1715147	1189816	782876	1250285	347333

Table 27.--Number of all live trees on commercial forest land, Virginia, by species and diameter class, 1977

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
						THOUSAND TREES							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	737357	300651	202421	109090	53998	29820	19641	11312	6070	2724	1027	597	6
LONGLEAF PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
POND PINE	1567	299	299	101	242	186	268	111	92	41	26	0	2
SHORTLEAF PINE	199933	66863	40697	37499	27505	15182	6672	2504	683	190	81	37	0
SLASH PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
VIRGINIA PINE	581638	376840	236476	132436	80931	36695	13656	3632	794	128	33	13	0
OTHER YELLOW PINES	76453	19041	12680	14835	11133	8936	5501	2746	1002	440	79	52	0
TOTAL YELLOW PINES	1697048	765514	492583	293963	173809	90619	45938	20305	8641	3523	1246	699	8
OTHER SOFTWOODS:													
EASTERN WHITE PINE	140213	81523	24858	11919	7776	5348	3427	2602	1397	675	327	343	16
CYPRESS	2193	303	294	185	133	236	259	241	186	90	90	141	35
OTHER SOFTWOODS	288168	194551	60776	19556	7304	2736	1399	810	330	306	149	196	53
TOTAL OTHER SOFTWOODS	430574	276377	85928	31662	15215	8320	5085	3653	1913	1071	566	680	104
SOFT HARDWOODS:													
SWEETGUM	753359	548292	135257	46196	24286	12768	7067	3846	1784	929	468	443	29
YELLOW POPLAR	623495	342024	137675	58636	37902	28107	20682	13091	7483	3991	1891	1633	180
TUPELO AND BLACKGUM	690716	555140	76082	25413	14010	8892	4856	2816	1635	832	430	536	76
BAY AND MAGNOLIA	69109	46065	10798	6080	3092	1743	620	331	97	69	82	105	7
SOFT MAPLES	1473809	1101220	212560	75960	38626	22338	10608	5271	3341	1729	950	1061	125
OTHER SPECIES	272762	167226	55095	18849	13056	7282	4842	2733	1696	785	420	698	78
TOTAL SOFT HARDWOODS	3913252	2759987	597487	233134	130968	81130	48675	28088	16036	8335	4241	4676	495
OAKS:													
BLACK	218114	100218	39439	27706	17296	12839	8426	5564	3169	1647	920	608	82
CHESTNUT	493193	149954	120696	81247	53832	33890	20342	12848	8622	4862	2892	3373	455
LAUREL	6457	4069	1215	631	144	156	73	14	67	40	5	26	17
NORTHERN RED	250153	132361	39390	26826	16432	10988	8258	6061	3626	2215	1497	2117	380
SCARLET	283401	105022	67953	43198	29024	17805	9598	5842	2675	1167	533	363	21
SOUTHERN RED	170871	94947	36963	14376	9096	6129	3738	2925	1233	726	332	349	58
WATER	52535	38756	8145	3073	1784	438	318	156	78	32	32	22	1
WHITE	702193	327990	161592	82303	48794	32340	20072	12871	7733	3974	2136	2172	216
OTHER OAKS	141122	81847	21542	14610	8571	5434	3975	2433	993	682	410	539	86
SCRUB OAKS	29575	18725	8057	1826	486	362	92	12	0	15	0	0	0
TOTAL OAKS	2347914	1053889	504991	295798	185459	120381	74892	48726	28596	15360	8757	9749	1316
OTHER HARDWOODS:													
ASH	188303	120604	36490	14293	7346	3875	2687	1431	866	380	154	159	18
HICKORY	657227	416282	114906	51218	31093	19898	10785	6467	3386	1804	679	643	66
OTHER HARD HARDWOODS	1964676	1505310	293166	85235	44059	24681	13777	7652	4512	2752	1544	1770	220
TROPICALS AND MISC. SPP.	1276643	956477	239570	57068	16633	4657	1520	475	138	50	23	32	0
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	4106851	2998673	684132	207814	99131	53111	28769	16025	8902	4986	2400	2604	304
ALL SPECIES	12695639	7854440	2365121	1062371	604582	353761	203359	116797	64088	33275	17210	18408	2227

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Table 28.--Merchantable cubic volume of all live trees on commercial forest land, Virginia, by species and diameter class, 1977

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
						THOUSAND CUBIC FEET							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	2220843	0	0	260525	341602	369143	396219	333034	244608	145540	71164	57533	1275
LONGLEAF PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
POND PINE	16774	0	0	299	1341	1869	3656	2880	3115	1421	1713	0	280
SHORTLEAF PINE	714537	0	0	96776	183589	187512	130972	70459	27127	9289	5095	3716	0
SLASH PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
VIRGINIA PINE	1728934	0	0	380384	541078	434105	245132	92994	26740	5691	1931	679	0
OTHER YELLOW PINES	397420	0	0	36957	61823	89084	65093	63130	33204	19768	4352	4009	0
TOTAL YELLOW PINES	5078508	0	0	774943	1129633	1081713	861272	562497	334794	181709	84255	66137	1555
OTHER SOFTWOODS:													
EASTERN WHITE PINE	368980	0	0	30164	48573	55996	55406	59734	43591	29157	17869	26027	2413
CYPRESS	51187	0	0	748	1034	2927	5282	7468	7553	4462	5413	11556	4744
OTHER SOFTWOODS	200975	0	0	42104	36284	24634	18235	16507	11041	13130	8050	18348	10642
TOTAL OTHER SOFTWOODS	621142	0	0	73016	85891	83557	78923	85759	62185	46749	31332	55931	17799
SOFT HARDWOODS:													
SWEETGUM	833035	0	0	103737	144227	147524	138900	110791	69763	47233	29341	36843	4676
YELLOW POPLAR	2264737	0	0	169027	244570	331324	390056	355500	277217	196065	115272	156374	29332
TUPELO AND BLACKGUM	514200	0	0	62637	78393	87581	79846	66132	50994	31118	18973	29800	8726
BAY AND MAGNOLIA	88706	0	0	14380	19017	18685	10638	8063	3094	2872	4785	6411	761
SOFT MAPLES	1245190	0	0	213250	221817	226930	168615	118247	100625	65590	45706	68757	15653
OTHER SPECIES	548290	0	0	49234	78175	77165	87075	68601	60441	35248	24707	53952	13692
TOTAL SOFT HARDWOODS	5494158	0	0	612265	786199	869209	875130	727334	562134	378126	238784	352137	72840
OAKS:													
BLACK	871152	0	0	75856	97173	129715	135918	131454	105936	71498	51666	61212	10724
CHESTNUT	2307682	0	0	205169	295574	334668	313031	286684	261081	188878	137404	231071	54322
LAUREL	15527	0	0	1487	994	1517	1266	345	2511	1606	407	2559	2833
NORTHERN RED	1131516	0	0	77504	100533	118172	142356	152182	123729	100215	85689	173943	57191
SCARLET	1019737	0	0	123049	178920	194416	166900	144376	98053	54323	29604	26913	3183
SOUTHERN RED	403467	0	0	33384	49967	62198	61160	69559	41656	32396	17687	26654	8404
WATER	39226	0	0	8208	10024	4805	5096	4173	2515	1484	1566	1210	145
WHITE	2374507	0	0	223816	296429	360186	360504	336246	276644	186202	123959	176533	33786
OTHER OAKS	425393	0	0	36217	49368	59262	66546	60750	34551	31788	24478	49117	13716
SCRUB OAKS	7538	0	0	2926	1484	2027	774	122	0	205	0	0	0
TOTAL OAKS	8595945	0	0	787618	1080466	1266966	1253555	1185891	947076	668595	472460	749412	183904
OTHER HARDWOODS:													
ASH	272103	0	0	36481	42199	41854	45909	35640	29300	17575	7668	12509	2968
HICKORY	1211265	0	0	131966	178921	212335	190240	171056	125059	89688	42264	58835	10901
OTHER HARD HARDWOODS	1604909	0	0	205041	249309	248608	223693	177794	144552	117118	82153	130674	25967
TROPICALS AND MISC. SPP.	267267	0	0	107297	78658	42272	20657	9758	3574	1979	975	2067	0
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	3355544	0	0	480785	549087	545069	480529	394248	302485	226360	133060	204085	39836
ALL SPECIES	23145297	0	0	2728627	3631276	3866514	3549409	2955729	2208676	1501539	959891	1427702	315934

Table 29.–Total cubic volume of all live trees on commercial forest land, Virginia, by species and diameter class, 1977

SPECIES	ALL CLASSES	DIAMETER CLASS 2	4	6	8	10	12	14	16	18	20	22-28	30+
						THOUSAND CUBIC FEET							
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	2929832	57405	236943	371839	416735	430599	453498	377656	275879	163588	79845	64423	1422
LONGLEAF PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
POND PINE	19712	14	263	383	1620	2204	4460	3309	3566	1623	1952	0	318
SHORTLEAF PINE	906140	14040	39881	131454	221376	218110	150072	80089	30666	10514	5757	4181	0
SLASH PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
VIRGINIA PINE	2656065	123803	435194	504773	652009	509294	283597	106943	30725	6511	2206	1010	0
OTHER YELLOW PINES	495374	5321	23063	48216	73858	103597	98412	72570	38066	22673	4959	4637	0
TOTAL YELLOW PINES	7007123	200583	735344	1056665	1365598	1263804	990039	640567	378904	204909	94719	74251	1740
OTHER SOFTWOODS:													
EASTERN WHITE PINE	467178	10994	19471	40253	58609	66150	64736	69396	50451	33682	20627	30025	2784
CYPRESS	63860	145	408	1048	1328	3684	6505	9061	9186	5450	6532	14029	6484
OTHER SOFTWOODS	341483	32709	56121	63885	46161	29870	21641	21413	12666	14966	9167	20830	12054
TOTAL OTHER SOFTWOODS	872521	43848	76000	105186	106098	99704	92882	99870	72303	54098	36326	64884	21322
SOFT HARDWOODS:													
SWEETGUM	1246132	94572	136415	154571	180280	175259	161845	127699	79868	54005	33566	42564	5488
YELLOW POPLAR	2851870	84040	144598	226076	291795	382557	445114	402904	312933	220848	130033	176406	34566
TUPELO AND BLACKGUM	638620	104183	65708	90158	99681	107500	99543	60720	61784	37735	23412	37059	11337
BAY AND MAGNOLIA	132671	9881	11901	21019	23995	22884	13075	9668	3596	3254	5596	6966	836
SOFT MAPLES	2181015	267693	342029	304464	283311	279576	208507	143400	120582	78160	53952	81092	18249
OTHER SPECIES	771879	37645	70763	69804	97422	92694	103608	81037	70611	41220	28540	62560	15775
TOTAL SOFT HARDWOODS	8022387	598014	791414	866092	976484	1060470	1031892	845428	649374	435222	275099	406647	86251
OAKS:													
BLACK	1185950	22281	49708	113767	128427	164668	170364	163492	131009	88221	63926	76214	13873
CHESTNUT	3138071	32216	151901	296392	385543	422929	394605	357967	326114	235209	172225	291435	71535
LAUREL	22578	863	1223	2348	1349	2004	1613	435	3182	2011	509	3240	3801
NORTHERN RED	1514941	30237	45690	107181	130255	150115	178106	190168	154511	125326	106782	221050	75520
SCARLET	1405506	28225	75498	173944	230864	244352	208051	179270	121879	67409	37283	34732	3999
SOUTHERN RED	585359	21519	43299	54199	67508	79768	76282	86126	51369	39687	21819	32988	10795
WATER	71758	7915	10407	12780	13675	6285	6846	5289	3142	1843	1914	1502	160
WHITE	3298231	75341	181179	330498	389269	457328	451912	418530	343613	230795	154527	221231	44008
OTHER OAKS	591688	16537	25564	57754	66118	75487	83714	75933	42967	39261	30319	60761	17473
SCRUB OAKS	24072	4111	8023	4617	2098	2689	1685	267	0	582	0	0	0
TOTAL OAKS	11838354	239245	592492	1153480	1415106	1605625	1573178	1477477	1177786	830344	589304	943153	241164
OTHER HARDWOODS:													
ASH	395553	26153	34839	54890	53277	49491	54255	41581	33927	20277	9030	14450	3383
HICKORY	1783772	88012	140079	207180	237134	267174	233510	208970	152590	109491	51657	73466	14509
OTHER HARD HARDWOODS	2714338	309459	370291	274876	318479	311399	260800	221129	180567	145769	102624	164660	34285
TROPICALS AND MISC. SPP.	838637	188727	287786	156334	103158	53456	26194	12200	4524	2424	1238	2596	0
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	5732300	612351	832995	693280	712048	681520	594759	483880	371608	277961	164549	255172	52177
ALL SPECIES	33472685	1694041	3028245	3874703	4575334	4711123	4282750	3547222	2649975	1802534	1159997	1744107	402654

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Table 30.–Merchantable green weight of all live trees on commercial forest land, Virginia, by species and diameter class, 1977

SPECIES	ALL CLASSES	DIAMETER CLASS											
		2	4	6	8	10	12	14	16	18	20	22-28	30+
	HUNDRED THOUSAND POUNDS												
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	1636532	0	0	196706	253511	273121	290840	243471	178408	105987	51760	41801	925
LONGLEAF PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
POND PINE	11997	0	0	218	960	1320	2745	2064	2235	1019	1234	0	202
SHORTLEAF PINE	502205	0	0	62374	127401	135256	94179	50574	19446	6666	3648	2659	0
SLASH PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
VIRGINIA PINE	1326942	0	0	321005	406150	322771	191966	68951	19608	4214	1430	647	0
OTHER YELLOW PINES	260823	0	0	22487	41360	57064	56050	42163	22507	13468	2959	2765	0
TOTAL YELLOW PINES	3738499	0	0	602792	829382	769534	625780	407223	242404	131354	61031	47872	1127
OTHER SOFTWOODS:													
EASTERN WHITE PINE	247000	0	0	20797	32513	36936	37459	40511	29367	19401	11760	16770	1484
CYPRESS	39332	0	0	385	577	1971	3795	5584	5607	3515	4262	9401	4015
OTHER SOFTWOODS	156466	0	0	34520	28379	16031	14029	14476	8624	10180	6203	13750	7674
TOTAL OTHER SOFTWOODS	442798	0	0	55702	61469	57540	55283	60571	43796	33096	22245	39921	13173
SOFT HARDWOODS:													
SWEETGUM	617787	0	0	79111	104502	107830	102082	62017	52082	35610	22320	28477	3756
YELLOW POPLAR	1609869	0	0	115064	167303	229562	276362	254776	200552	143040	84710	116144	22356
TUPELO AND BLACKGUM	348668	0	0	38312	48083	55577	52175	45906	37535	23655	14770	24620	6035
BAY AND MAGNOLIA	56684	0	0	8106	11390	11489	6645	5484	2186	2130	3636	5003	613
SOFT MAPLES	937650	0	0	156296	167936	173412	123281	68749	76473	50157	35021	52572	11749
OTHER SPECIES	371557	0	0	30928	49308	50324	56465	46148	42346	25342	16291	41021	11304
TOTAL SOFT HARDWOODS	3942215	0	0	429819	548604	628194	617010	523080	411176	279934	176748	267837	57813
OAKS:													
BLACK	779979	0	0	71771	89202	117676	122763	116523	92793	62222	44743	52849	9237
CHESTNUT	1820745	0	0	156241	225595	260491	241082	225495	206603	152870	112341	192045	45962
LAUREL	12585	0	0	1156	810	1245	1022	282	2063	1316	333	2077	2279
NORTHERN RED	933216	0	0	60601	81766	98445	116871	125596	102472	63240	71327	145152	47740
SCARLET	896552	0	0	107861	157506	172340	149074	126662	85073	46821	25436	23057	2722
SOUTHERN RED	333867	0	0	22234	35919	47714	52613	60190	36714	28871	15998	24991	8423
WATER	32011	0	0	6545	8118	3922	4136	3481	2105	1247	1323	1019	113
WHITE	1962616	0	0	171343	233908	292216	301974	282443	233835	156256	106039	152088	29912
OTHER OAKS	361931	0	0	26556	39111	49299	56269	52367	30296	28317	22009	45089	12618
SCRUB OAKS	8204	0	0	3414	1602	2120	764	116	0	186	0	0	0
TOTAL OAKS	7141706	0	0	627722	873537	1045670	1046770	993157	793954	563354	399549	638967	159026
OTHER HARDWOODS:													
ASH	174407	0	0	26741	28950	27308	28863	21876	17564	10260	4391	6915	1539
HICKORY	984671	0	0	97614	139115	173389	155757	140695	104122	75832	36164	51836	10149
OTHER HARD HARDWOODS	1382394	0	0	158017	207256	218080	196683	156643	126671	103423	73325	118029	23767
TROPICALS AND MISC. SPP.	194923	0	0	64162	55030	27771	15397	6935	2445	1306	623	1252	0
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	2736395	0	0	366534	430651	446548	396900	326149	250802	190823	114503	178034	35451
ALL SPECIES	18001613	0	0	2082569	2743643	2967486	2741743	2310180	1742134	1198561	776076	1172631	266590

Table 31.--Total green weight of all live trees on commercial forest land, Virginia, by species and diameter class, 1977

SPECIES	ALL CLASSES	DIAMETER CLASS											
		2	4	6	8	10	12	14	16	18	20	22-28	30+
	HUNDRED THOUSAND POUNDS												
SOUTHERN YELLOW PINES:													
LOBLOLLY PINE	2136213	40782	151465	281039	309070	318592	332692	276105	201232	119128	58079	46797	1032
LONGLEAF PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
POND PINE	14075	11	172	278	1160	1557	3174	2369	2556	1163	1406	0	229
SHORTLEAF PINE	637330	11103	28829	84403	153579	157353	107923	57487	21989	7548	4123	2993	0
SLASH PINE	0	0	0	0	0	0	0	0	0	0	0	0	0
VIRGINIA PINE	2013777	90265	308192	427380	489503	378665	210526	79297	22754	4820	1632	743	0
OTHER YELLOW PINES	326439	3854	16339	29366	49381	66343	64022	48469	25803	15450	3375	3197	0
TOTAL YELLOW PINES	5127834	146055	504997	822466	1002693	922510	719337	463727	274334	149109	68615	53730	1261
OTHER SOFTWOODS:													
EASTERN WHITE PINE	313225	8020	12781	27756	39241	43629	43753	47018	33986	22409	13572	19344	1712
CYPRESS	49042	109	302	540	740	2481	4673	6775	7083	4292	5172	11413	5462
OTHER SOFTWOODS	264068	25022	41772	52393	36670	22567	16637	16749	9892	11606	7063	15609	8693
TOTAL OTHER SOFTWOODS	626335	33151	54855	80691	76651	68677	65063	70537	50943	38307	25807	46366	15867
SOFT HARDWOODS:													
SWEETGUM	944286	77989	112553	118357	130617	128130	115934	94543	59626	40709	29541	32906	4408
YELLOW POPLAR	2023192	60585	99373	153906	199620	265072	315395	268775	226389	161141	95546	131036	26352
TUPELO AND BLACKGUM	591261	83687	65478	55070	61111	68233	64974	56034	45504	28697	18259	30717	10497
BAY AND MAGNOLIA	65700	7124	6228	11637	14366	14067	8154	6574	2544	2415	4251	5450	678
SOFT MAPLES	1626924	200183	244274	225891	214464	213598	152423	107615	91651	59771	41343	62014	13697
OTHER SPECIES	529470	28679	52347	43967	51544	60451	67235	54480	49450	29621	21117	47538	13021
TOTAL SOFT HARDWOODS	5800833	458247	585253	609048	681724	749527	727125	608018	475164	322354	206057	309663	68653
OAKS:													
BLACK	1065153	21624	44764	107777	117901	149640	153868	144923	114753	76787	55358	65806	11952
CHESTNUT	2490827	29275	132627	225715	294221	329216	304007	261599	260578	190324	140769	242671	60425
LAUREL	18555	842	1116	1825	1100	1644	1301	356	2614	1650	416	2632	3059
NORTHERN RED	1256863	29394	41332	83757	105921	125043	146245	156957	127964	104104	88871	164346	62927
SCARLET	1240150	27241	68460	152450	203229	216607	165810	157261	105743	58102	32030	29750	3417
SOUTHERN RED	487793	20899	39134	35999	48496	61198	65871	74508	45053	35369	19736	30710	10820
WATER	60615	7716	9371	10178	11072	5126	5553	4411	2626	1550	1617	1266	125
WHITE	2725353	65344	150148	252909	307102	370499	278533	351592	290209	196137	132178	191297	38915
OTHER OAKS	503157	15073	22011	42390	52380	62803	70784	65454	37674	34967	27259	55788	16574
SCRUB OAKS	25423	4473	8021	5401	2264	2613	1663	259	0	529	0	0	0
TOTAL OAKS	9873689	221881	517004	918431	1143686	1325093	1313635	1237310	987216	699519	498234	803666	208214
OTHER HARDWOODS:													
ASH	265583	21346	28399	40309	36568	32295	34095	25508	20331	11630	5164	7985	1753
HICKORY	1464797	81271	122841	153116	184323	218170	191149	171683	127040	92561	44206	64724	13511
OTHER HARD HARDWOODS	2324777	261835	313200	212601	265088	272774	246217	194593	158142	128691	91586	148600	31244
TROPICALS AND MISC. SPP.	654209	158139	230570	122970	72179	35124	19495	8675	3093	1601	790	1573	0
PALMS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER HARDWOODS	4709366	522591	695010	529196	558158	558363	490956	400659	308606	234083	141746	222688	46508
ALL SPECIES	26136257	1381925	2357119	2959834	3462312	3624170	3316116	2780251	2096263	1442972	940459	1436313	340523

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PROBLEMS AND POSSIBLE SOLUTIONS

This paper reports the best estimates of southeastern forest biomass that can be made at this time, but in many ways the estimates are not good enough. Inventory techniques used to obtain the reported information were designed primarily to estimate merchantable volumes. As a result, the errors associated with estimates of number of merchantable trees and their volumes are known and considered acceptable. Errors associated with volume and weight of unmerchantable trees and of portions of trees traditionally left in the woods are not known. Weight of shrubs, grasses, and forbs was not estimated because data were not available. Similarly, biomass in dead trees and downed trees was not estimated. Forest land that is classed as "unproductive" has been excluded from detailed inventories and is not represented here, nor is productive forest land which has been removed from commercial timber production, or land classed as "nonforest." As a result, the biomass totals reported here are incomplete, and the errors associated with the totals are unknown.

Although the totals reported here are of considerable interest, they cannot be fully analyzed without information on annual growth, annual removal, and natural loss of biomass. Furthermore, we think that information on conditions where the material occurs is very important. Some saplings, for example, occur as suppressed understories of stands that are ready for harvest. These trees may represent an excellent source of fuel if they cannot be used for conventional products. Other saplings are in young stands and represent prime growing stock for the future. Ways must be found to separate biomass that is ready for harvest from that which represents valuable growing stock.

It is important to recognize the relationship between shortages of fuel and interest in biomass data. Much of the demand for information on forest biomass can be traced to organizations or to individuals who hope to use wood for fuel. The demand for fuelwood is new and must be added to those for traditional forest products. In forest inventories, therefore, biomass data are no substitute for data that have been gathered for many years. Traditional forest industries will want to receive the same sorts of information they have always received. The demand for biomass information is essentially a new, additional demand.

Interest in biomass for fuel centers on material that is not utilized by traditional forest industries. Supposedly such material will be available at a low price because there will be relatively little competition for its use. Hence, it is most important in a biomass inventory to measure accurately the materials that have been ignored in traditional inventories—small trees, tops of large trees, stumps, rough and rotten trees, and dead trees.

Many actions will be needed to inventory and report southeastern biomass in the most useful ways. Some of the needs are listed below under three categories—coordination, research, and inventory.

COORDINATION

The need for information about biomass has been apparent for several years, and many experts are working in the field. Efforts should be coordinated to avoid duplication.

In 1979 the Southern Forest Biomass Working Group was formed under the leadership of the Utilization of Southern Timber Work Unit. The goals of the organization are:

1. Standardizing of tree component definitions.
2. Acceptance of standard approaches for sampling and weight estimation.
3. Accuracy standards of biomass estimation.
4. Agreement on major biomass variables and reporting methods.

RESEARCH

The equations used to generate biomass estimates for this report come from a database of over 4,000 trees, but many species had to be grouped because weight equations for some members of the group were unavailable. Another problem is the limited geographic basis of the 62 sample locations of the database trees for the broad regional application attempted here. Some obvious research needs are:

- Equations for predicting tree weights from tree diameters and heights for all southeastern species containing significant amounts of biomass.
- Improved equations for predicting weights of highly variable tree components such as crowns.
- Identification of geographic variations in weight relationships for important tree species in the South.
- Identification of variations in weight per cubic foot for various portions and components of trees.
- Methods for estimating foliage weight from the space it occupies. The volume of space occupied by crowns of sample trees is now being estimated by Southeastern Station inventory crews.
- Methods for estimating weight of shrubs, vines, grasses, and forbs from the space they occupy. Once again, inventory crews are already estimating space occupancy.
- Efficient plot designs for inventory of understory vegetation on forest land and all vegetation on nonforest land.
- Biomass growth and yield for all kinds of forest conditions and silvicultural treatments.
- In-depth analysis of the biomass resource to clarify potential for increasing utilization without seriously affecting traditional wood product supplies.
- Identification of geographic patterns in biomass distribution and availability for fuel.

INVENTORY

Since much of the material to be inventoried has been ignored in the past, some obvious changes will be required:

1. Measurement of understory and lesser vegetation on all forest land.
2. Measurement of trees and other vegetation on nonforest land.
3. Determination of biomass growth and removals.
4. Determination of biomass utilization during harvesting and land clearing.

In response to the needs recognized here, we propose to inventory each of the items identified by the statewide biomass model listed below. We will retain detailed species, size, and quality information for all vegetation and fully describe and characterize many biotic, abiotic, and economically important site and stand variables so that the biomass data can be screened, sorted, aggregated, and analyzed in various ways.

STATEWIDE BIOMASS MODEL

Commercial Forest Land

I. Trees (1.0-inch d.b.h. and larger)
   A. Growing stock
      1. Wood and bark
         (a) Merchantable portion
         (b) Stumps, tops, and limbs
      2. Foliage
   B. Cull trees
      1. Wood and bark (total tree)
      2. Foliage
   C. Saplings
      1. Wood and bark (total tree)
      2. Foliage

II. Other biomass
   A. Seedlings
   B. Shrubs
   C. Vines
   D. Grasses
   E. Forbs

Productive Reserved Forest

I. Trees (all live trees 1.0-inch d.b.h. and larger)
   A. Wood and bark (total tree)
   B. Foliage

II. Other biomass
   A. Seedlings
   B. Shrubs
   C. Vines
   D. Grasses
   E. Forbs

Unproductive Forest Land

I. Trees (all live trees 1.0-inch d.b.h. and larger)
   A. Wood and bark (total tree)
   B. Foliage

II. Other biomass
   A. Seedlings
   B. Shrubs
   C. Vines
   D. Grasses
   E. Forbs

Nonforest Lands (Associated Biomass)

I. Land use class
   A. Trees (all live trees 1.0-inch d.b.h. and larger)
      1. Wood and bark (total tree)
      2. Foliage
   B. Other biomass
      1. Seedlings
      2. Shrubs
      3. Vines
      4. Grasses
      5. Forbs

BEST DOCUMENT AVAILABLE

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KEYWORDS: Florida, Georgia, North Carolina, South Carolina, Virginia, forest inventory, fuelwood.

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